

For Reference

NOT TO BE TAKEN FROM THIS ROOM

Ex LIBRIS
UNIVERSITATIS
ALBERTAENSIS



For Reference

NOT TO BE TAKEN FROM THIS ROOM

THE UNIVERSITY OF ALBERTA
ATTITUDE CHANGE AS A FUNCTION OF
MAGNITUDE OF JUSTIFICATION

by

JOHN CHARLES RENNER



A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF PSYCHOLOGY

EDMONTON, ALBERTA

AUGUST, 1968

Thesis
1968 (F)
56 D

ii

UNIVERSITY OF ALBERTA
FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Attitude Change as a Function of Magnitude of Justification" submitted by John Charles Renner in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

Abstract

The purpose of this study was to demonstrate that the relationship between attitude change and magnitude of justification, for an individual induced to perform a counterattitudinal act, represents a compromise between the inverse relationship predicted by dissonance theory and the direct relationship predicted by incentive theory.

For dissonance theory, the process of attitude change in such a situation is one of inconsistency reduction. That is, fewer reasons, or sources of justification, for performing a counterattitudinal act increases the apparent inconsistency between one's acts and one's beliefs. This inconsistency can be resolved by changing one's attitude to be more congruent with one's behavior. For incentive theory, however, the process of attitude change is one of "spread of affect." That is, any positive affect (which increases as the magnitude of reinforcement increases) associated with one's act generates favorable attitudes with respect to the act, the circumstances, and the issues associated with the act. No research has taken into consideration the fact that the process of attitude change postulated by dissonance theory in no way precludes the simultaneous process of attitude change postulated by incentive theory.

In this study, it was predicted that under very low justification and under very high justification conditions the reinforcement aspect of the situation would be dominant over the individual's inconsistency reduction tendencies. Thus, less attitude change was predicted under very low compared to very high conditions of justification. Alternatively, it was predicted that under moderately low and under adequate justification conditions, the inconsistency reduction tendencies of the individual would

be dominant over the reinforcing aspects of the situation. Therefore, more attitude change was predicted under the moderately low than under the adequate justification conditions.

This study utilized two different sources of justification--amount of monetary incentive, and attitudinal orientation of the sponsoring organization--in a 3 x 3 factorial design. Subjects were males enrolled in an introductory psychology class who indicated on a premeasure that they were in favor of the United States intervention in the Viet Nam war (pro-war). An experimenter, supposedly representing either a pro-war, anti-war, or neutral research organization, offered the subject either \$0.50, \$1.50 or \$4.50 to write a persuasive anti-war essay. The experimenter always explained how such an essay would further the aims of whatever organization he was purportedly representing.

The appropriate combinations of monetary incentive and sponsorship defined the following levels of justification that were of direct interest for this study. The anti-war sponsor paying \$0.50 represented the extremely low justification condition. The neutral research organization paying \$0.50 or the anti-war organization paying \$1.50 represented the moderately low justification condition. The neutral research organization paying \$1.50 represented the adequate justification condition. The pro-war sponsor paying \$4.50 represented the over justification condition. All of the cells in the 3 x 3 design were filled (9 per cell) but only those contributing to the above levels of justification were of interest for the problem under investigation.

In addition to the pre and postmeasures of the subject's attitude toward the war, measures were also taken of the pre and post perceived adequacy of

pay, how much the subject liked the experimenter, the task, and working for the organization. The number of minutes spent writing each essay, the number of words and the number of arguments per essay were also measured. None of these measures provided clear support for either dissonance theory, incentive theory, or the hypotheses of the present study.

This study was particularly designed to avoid violating the assumptions of either of the theories while minimizing the biases of experimental design which would favor one theory over another. It was concluded that the lack of significant findings indicates that some of the methodological differences between this study and other studies supporting one of the above theories may point to the presence of certain critical underlying assumptions for both theories which have, heretofore, not been considered to be of theoretical import. The possible effects of the subject's ego-involvement with the issue and the salience of his attitudinal position and actions with respect to the issue were discussed in some detail since clarification in these areas would appear to have the most extensive theoretical and empirical ramifications.

TABLE OF CONTENTS

	PAGE
ABSTRACT	iii
TABLE OF CONTENTS.	vi
LIST OF TABLES	vii
LIST OF FIGURES.	viii
LIST OF APPENDICES	ix
INTRODUCTION	1
Theoretical Bases of the Controversy	1
Empirical Bases of Controversy	5
The Problem.	18
METHODS.	24
Subjects	24
Procedure.	24
Summary of the Design.	26
RESULTS.	28
DISCUSSION	38
CONCLUSIONS AND FURTHER RESEARCH	47
REFERENCES	53
APPENDICES	57

LIST OF TABLES

TABLE		PAGE
1	Summary of the Analysis of Variance of the Attitude Change Scores.	28
2	Mean Attitude Change Scores Under Each Experimental Condition.	29
3	Summary of the Analysis of Variance of Responses on the Pre-Writing Adequacy of Payment Question	30
4	Mean Response to the Pre-Writing Adequacy of Payment Question Under Each Experimental Condition	30
5	Summary of the Analysis of Variance of Responses on the Post-Writing Adequacy of Payment Question.	31
6	Mean Response to the Post-Writing Adequacy of Payment Question Under Each Experimental Condition	32
7	Summary of the Analysis of Variance of the Adequacy of Payment Change Scores	33
8	Mean Adequacy of Payment Change Score Under Each Experimental Condition	33
9	Summary of the Analysis of Variance of Responses to the Question: "How do you feel about working for this organization?"	36
10	Mean Response to the Question: "How do you feel about working for this organization?" Under Each Experimental Condition	36

LIST OF FIGURES

PAGE

Figure 1. Sponsorship X Money Interaction of Adequacy of Payment Change Scores (Prescore minus Postscore)	35
---	----

LIST OF APPENDICES

APPENDIX		PAGE
A	Pre-experimental and Post-experimental Attitude Questionnaire	58
B	Task Instructions for the Positive, Negative, and Neutral Sponsors	59
C	Instruction Sheet Footnotes to Induce Feelings of Underpayment, Overpayment, or Adequate Payment for Task Performance .	63
D	Pre-writing Experiment Evaluation Form . . .	64
E	Post-Writing Experiment Evaluation Form. . .	65
F	Test of Significance for Linear and Quadratic Trends over the Levels of Payment	66
G	Orthogonal Comparisons on Attitude Change	67
H	Summary of the Analysis of Covariance of the Post-Experimental Attitude Measure.	69
I	Summary of the Analysis of Variance of the Transformed Adequacy of Payment Change Scores.	70
J	Summary of the Analysis of Variance of Responses to the Question: "How much choice did you have in agreeing to participate?".	71
	Mean Response to the Question: "How much choice did you have in agreeing to participate?" under each Experimental Condition.	71
K	Summary of the Analysis of Variance of Responses to the Question: "How much did you enjoy the experiment?"	72
	Mean Response to the Question: "How much did you enjoy the experiment?" under each Experimental Condition.	72

APPENDIX

PAGE

L	Summary of the Analysis of Variance of Responses to the Question: "What did you think of the experimenter?"	73
	Mean Response to the Question: "What did you think of the Experimenter?" under each Experimental Condition.	73
M	Summary of the Analysis of Variance of the Number of Arguments per Essay	74
	Mean Number of Arguments per Essay under each Experimental Condition.	74
N	Summary of the Analysis of Variance of the Number of Words per Essay	75
	Mean Number of Words per Essay under each Experimental Condition.	75
O	Summary of the Analysis of Variance of the Number of Minutes Spent Writing per Essay .	76
	Mean Number of Minutes Spent Writing per Essay Under Each Experimental Condition	76
P	Correlation Between all Pairs of Dependent Variables Averaged over all Independent Variables	78
Q	Correlations Between all Pairs of Dependent Variables for each Level of Payment	79
R	Correlations Between all Pairs of Dependent Variables for each Level of Sponsorship . .	82
S	Issues, Rewards, and Sponsors of Representative Studies	85

INTRODUCTION

The attainment of societal, organizational, or personal goals frequently depends on whether or not certain individuals can be induced to perform disliked acts. If the act, or the outcome of the act is an end in itself, then it is a relatively simple matter to determine the level and type of reward or threat sufficient to elicit the desired behavior. However, when the performer's attitudes associated with the act are of some concern--such as in education--the criteria of success are less easily determined and, thus, the most effective induction procedures are more difficult to identify. It is generally accepted though, that all of the methods which effectively and reliably produce the desired behavior are not equally efficient in inducing the desired attitudes.

Individuals can usually be induced to act against, or counter to, their attitudes if they are provided sufficient reason or reasons for doing so. Research on this problem of attitude change has typically consisted of attempts to relate variations in the reasons, or justifying circumstances, (sufficient to induce the desired behavior) to the attitudes associated with the act. That is, the individual may be induced to perform the task if he is offered a monetary reward, or, if he is told that the behavior will benefit a worthy cause, or, he may be offered various combinations of inducements. The nature of the relationship between the magnitude of justification and attitude change has recently been the subject of much controversy. Dissonance theory (Festinger, 1957) predicts that the more justification a person has for performing a counterattitudinal (CA) act, the less will his underlying attitude change. Incentive theory (Hovland, Janis & Kelly, 1953; Janis & Gilmore, 1965; Rosenberg, 1965)

predicts that the greater the incentive associated with a person's behavior (CA or not), the more his underlying attitude will be modified to become congruent with that behavior. Thus, these two positions lead to opposite predictions about the effects of different levels of reward for CA role playing. The present study attempted to demonstrate the necessity of combining the different attitude change processes of both theories in order to effectively describe the relationship between justification and attitude change.

Theoretical Bases of the Controversy

Dissonance, according to Festinger (1957), is the result of a person's entertaining two cognitions simultaneously, one of which does not follow from or is incompatible with, the other. For example, a person's awareness that he is writing an essay supporting a position with which he personally disagrees is dissonant with his corresponding underlying attitude. However, all the perceived pressures, threats or rewards (justifications) which have induced him to perform this CA act are consonant with his performance. According to Festinger (1957), the dissonance associated with the performance of CA behavior decreases as the magnitude of perceived justification for performing the act increases. But, as the magnitude of justification decreases, dissonance, and the motivation to reduce dissonance, increases. Changing one's attitude to more closely approximate the position advocated in the essay would make the act appear to be less CA, thereby reducing the dissonance. Another mode of dissonance reduction would be to reevaluate the magnitude of justification. For example, a small pay rate could, in retrospect, seem to be perfectly adequate justification for performing

the CA act. Or, one could simply deny the CA content of the act. Theoretically, the mode of dissonance reduction most preferred is that which requires the least distortion or denial of reality.

Hovland, Janis and Kelly (1953) proposed that the acceptance of an attitude would be contingent upon the incentive associated with it. Incentives were defined as the quality and quantity of supporting arguments or the rewards and punishments associated with the acceptance or rejection of a given attitude. Janis and Gilmore (1965) suggested that when someone is asked to write a CA essay he is temporarily motivated to concentrate on developing the good points of one side of the issue and to suppress any irrelevant negative arguments. Such "biased scanning" should increase the salience of the CA arguments, thereby increasing the chances of acceptance of this new attitude. The larger the incentive, the more the person will be motivated to concentrate on the development of good arguments and the more he will change his attitude. Attitude change is not expected, however, if certain characteristics of the situation should arouse negative emotional responses, such as resentment or guilt, which would interfere with the process described above. For example, if a person is being paid for writing a CA essay, he may be more likely to suspect that he is being bribed or "tested" by the experimenter when the pay rate is very high than when it is very low. If such interfering emotional responses are not anticipated and controlled by the appropriate experimental manipulation, one may well expect an inverse relationship between incentive size and amount of attitude change. Janis and Gilmore (1965) suggest that a person need not be consciously aware of these emotional responses for them to interfere with the attitude change process.

Rosenberg (1965, 1966) also predicts that the incentive size will be directly related to the magnitude of attitude change when the individual performs a CA act. Rosenberg (1965, 1966) has suggested that when a person develops a set of CA arguments, as opposed to just committing one's self to do so, the dissonance experienced is of a much wider scope than dissonance analysis would have it. The individual is confronted not just by the fact that he has argued against his own point of view but also by the inconsistency between the plausibility of these new arguments and the affect originally associated with the attitude object. Rosenberg (1965, 1966) predicts that the resolution of this intra-attitudinal inconsistency between beliefs and affect will result in an attitude change toward the new beliefs. He reasons that the reward may act in one or both of the following ways. It may act to increase the quality of the CA arguments, and therefore the intra-attitudinal inconsistency. Or, it may act as a reinforcer to facilitate the acceptance of the CA arguments.

Rosenberg (1965, 1966) suggests that under high-reward conditions other factors may have to be considered. For example, under such conditions the subject may suspect that the experimenter will differentially evaluate him according to his response on the attitude questionnaire. Since persons who can be "bribed" into changing their attitudes are evaluated negatively in our society, the subject may consciously resist showing attitude change under such conditions. Under conditions of lower reward, such suspicions would be unlikely to arise since the pay would appear to be a fair, or less than fair, trade for the effort required.

Both Rosenberg (1965, 1966) and Janis and Gilmore (1965) predict a positive relationship between the amount of attitude change and incentive size, but they allow for the occurrence of an inverse relationship if the subject should feel suspicious or incredulous under high-reward conditions. In the latter case, however, Janis and Gilmore (1965) emphasize the subconscious interference during the process of role playing while Rosenberg (1965, 1966) assumes that the subject consciously resists any overt expression of attitude change on an attitude questionnaire when in the presence of the experimenter who paid him.

In summary, dissonance theory views reward as a source of justification. The performance of a CA act generates less dissonance as the magnitude of reward, or any form of justification, increases. When the subject feels he was minimally justified in performing a CA act, dissonance is high. Changing his attitude may reduce this dissonance by making the act seem less CA. Incentive theorists, on the other hand, predict that as rewards increase, biased scanning is intensified, the quality of responses improves, and the positive affect associated with the essay content increases. Presumably, attitude change increases as the foregoing effects increase. The incentive theorists also suggest that rewards may serve as cues for the arousal of interfering emotional responses such as suspicion or evaluation anxiety.

Empirical Bases of Controversy

Festinger and Carlsmith (1959) tested the dissonance theory prediction that the amount of attitude change and the magnitude of justification would be inversely related. The experimenter first had the subjects

perform a very boring task. It was then explained to the subject that some participants were told in advance that the task was interesting and enjoyable. The purpose of this deception, supposedly, was to see how one's expectations affected task performance. Then the experimenter said that he needed help because someone who should be in a positive expectation condition was waiting outside, but the experimenter's regular student confederates were not available. The subject was then offered either \$1.00 or \$20.00 to tell the other person that the task was interesting and enjoyable. The subject also agreed to help the experimenter again if he should need him. After the subject had lied to the other student, but before he had left the building, he was asked by another experimenter to complete an "experiment evaluation form." In support of the dissonance prediction, subjects in the \$20.00 (high justification) condition evaluated the task as being more boring than did the subjects in the \$1.00 (low justification) condition.

Chapanis and Chapanis (1964), Elms and Janis (1965), Janis and Gilmore (1965) and Rosenberg (1965, 1966) have suggested that in the \$20.00 condition many subjects may have been very suspicious about being paid such a large sum of money for exerting such little effort. However, this criticism is somewhat mitigated by Cohen's experiment (in Brehm & Cohen, 1962) in which more effort (essay writing) for more reasonable rewards (\$0.50, \$1.00, \$5.00, \$10.00) was required. An experimenter, identifying himself as a member of the (fictitious) Institute of Human Relations, approached subjects in their dormitory rooms and asked them to write an essay supporting the local police force which had recently been accused of brutality toward the students. Subjects were offered \$0.50,

\$1.00, \$5.00, or \$10.00 if they would agree to write the essay. After writing the essay, subjects in the \$0.50 condition rated the police force more positively than did subjects in the \$1.00, \$5.00, or \$10.00 conditions. These findings support Cohen's dissonance theory predictions. It may be, of course, that suspicion varies uniformly with reward. If so, the question still remains as to whether or not the difference in suspicion between the \$0.50 and the \$1.00 condition was large enough to have induced the significant difference in attitude change. Rosenberg (1965) suggested that in experiments such as Cohen's, the fear of being evaluated poorly by the experimenter would be particularly salient under conditions of high reward. Rosenberg (1965) eliminated this evaluation anxiety by separating the attitude manipulation and the attitude measurement. Subjects reporting for an experiment were told by the experimenter that he would be busy for about twenty minutes. As an apparent afterthought, the subject was told that a graduate student in education was conducting a "little" experiment down the hall and that the subject might want to spend his twenty minutes there, since cash was paid for participation. The subjects understood that they were free to wait for the experimenter or to go to the other experiment. In the latter experiment, the subjects were asked to write essays supporting the position that Ohio State University should not participate in Rose Bowl football games (a stand recently taken by the administration, against most students' wishes). Subjects were offered \$0.50, \$1.00, or \$5.00 to write this essay. After completing the essay, the subjects returned to the experimenter for whose experiment they had originally volunteered and completed a questionnaire dealing with "current

issues." The results supported the incentive theory prediction, with the subjects changing their attitudes more under high pay than under low pay conditions. The same sort of relationship was obtained in a related attitude area (abandoning athletic scholarships), while for six other attitudes, unrelated to athletic policy issues, there were no differences between groups. A blind coding of the essays indicated that the essays written for low pay were less persuasive than those written for high pay. The persuasiveness of the essay was significantly related to attitude change. Even when the subjects who had written very unpersuasive essays in the low pay condition were eliminated from the analysis the differences between reward groups were still significant. This study provides strong support for incentive theory. The attitude change--incentive relationship was as predicted; the essay quality improved with higher pay rates; and, the amount of attitude change was positively related to the rated persuasiveness of the essay.

Janis and Gilmore (1965) also attempted to reduce interfering emotional responses during the essay writing phase, but not just at the time of measurement as did Rosenberg (1965). Subjects were approached in their dormitory rooms and were offered \$1.00 or \$20.00 to write an essay supporting the advisability of adding an unpopular mathematics and science requirement to the undergraduate curriculum. When the sponsor was a research organization (positive sponsor) working on behalf of some leading universities, it was predicted that fewer negative emotional responses would be aroused than when the sponsor was a textbook firm (negative sponsor) attempting to increase sales. In partial support of incentive theory, subjects working for the positive sponsor were

more in support of adding the undesirable course to the curriculum than were the subjects working for the negative sponsor. However, neither the interaction effect nor the reward effect were significant. Interviews with the subjects indicated that the \$20.00 payment was the source of vague suspicions, guilt or conflict as had been predicted.

Because the findings of Janis and Gilmore (1965) were somewhat ambiguous, Elms and Janis (1965) conducted a similar study, using slightly different pay rates (\$0.50 and \$1.00) and more distinctly positive and negative sponsors (U.S. State Department and the Russian Embassy). Subjects were asked to write essays in favor of sending American students to Russia for four years to study the Soviet system of government and the history of Communism. Subjects writing for the positive sponsor significantly increased their favorability toward the essay topic as the pay rate increased. But, subjects writing for the negative sponsor showed a non-significant trend in the opposite direction. These findings are in accord with the incentive theory predictions that only when negative affect (from working for a sponsor with suspect motives) interferes with the process of self-persuasion will there be an inverse relationship between reward and attitude change.

Two representatives of dissonance theory (Aronson, 1966; Brehm, 1965) have offered criticisms of the Rosenberg (1965) and Elms and Janis (1965) studies. Aronson (1966) suggested that in Rosenberg's (1965) experiment the prestige of the experimenter was very low and the subject may simply have viewed the writing of the essay as inconsequential and, therefore,

not a dissonant act. Rosenberg (1966) retorted that such an explanation would represent a totally new derivation of dissonance theory. Traditionally, dissonance theorists would predict that the lower the prestige of the experimenter the more dissonance--and attitude change--there should be. Brehm's (1965) criticism of the Elms and Janis (1965) negative sponsorship condition represents a more direct derivation from dissonance theory. Brehm (1965) holds that the negative sponsorship condition represented such an extremely negative situation for most of the subjects that they would be compelled to reduce dissonance by some mode other than attitude change. He suggests that they may simply have admitted that "it was wrong to write that essay." This suggestion, that the probability of attitude change under extremely high dissonance is less likely than under a slightly lower level of dissonance, is another new (cf. above: Aronson, 1966) extension of dissonance theory that warrants closer examination.

At any rate, both Aronson (1966) and Brehm (1965) suggest that under conditions of extremely low justification there may, in opposition to the standard dissonance theory prediction, be relatively little attitude change. They attribute this deviation from dissonance theory to different processes, but the predicted outcomes are similar.

In Brehm's (1965) criticism of the Elms and Janis (1965) experiment, he does not discuss their findings, under the positive sponsorship conditions, which support the incentive theory predictions. One could argue, however, that the latter findings have little relevance to dissonance theory since the subjects did not really write a CA essay. The fact that the U.S. Government was considering sending students to study in Russia

could have been seen as a mature and admirable attempt to develop peaceful contacts with a hostile country. The same program sponsored by the Russians, however, could have been seen as an underhanded attempt to turn some fine American boys into Communist sympathizers. Thus, the meaning of the proposal may have varied with the presumed motivations of the source.

The preceding explanation implies that when subjects receive more than adequate justification for performing a CA act the inconsistent nature of the act may become inconsequential or may change in meaning. Leventhal (1964) tested a two-process model which predicted that a subject's liking for a boring task, after committing himself to future participation, would be greatest in the underpaid (due to the dissonance) and the overpaid (due to the incentive effect) conditions and least in the adequately paid condition. Although his results only supported an incentive theory prediction, Leventhal (1964) suggested that perhaps the amount and/or importance of dissonant information in the underpay condition was not sufficient to adequately test his prediction.

Several experimenters have demonstrated that incentive effects can simply be reduced to an absence of dissonance arousal. Carlsmith, Collins and Helmreich (1966) predicted that CA essay writing at the request of an experimenter was less dissonance arousing than was CA verbalization in a direct face-to-face confrontation with another subject. Presumably, in the former case, the experimenter would obviously be aware that the essay did not necessarily reflect the subject's attitude. The subject may even view the task as an opportunity to demonstrate his intellectual open-mindedness. But, in the latter case, the subject must

conduct himself in such a way that a naive person will attribute that attitude to the subject which is reflected in the subject's verbalization. As predicted, the findings supported dissonance theory in the face-to-face condition and incentive theory in the essay writing condition. Neither the content nor the organization of the essays was related to either the amount of attitude change or to the magnitude of reward. Carlsmith et al. (1966) suggested that the restricted content of the essay--describing a simple task as fun, exciting, interesting and enjoyable--may have limited possible differences in essay quality. While the results of the above study may explain the opposing outcomes of the Festinger and Carlsmith (1959) face-to-face experiment and Rosenberg's (1965) essay writing experiment, they are not applicable to Cohen's (1962) essay writing experiment which supported dissonance theory.

Of course, if Cohen's (1962) findings were, as Rosenberg (1965) suggested, due to evaluation anxiety rather than to the dissonance arousal, then the explanation by Carlsmith et al. (1966) would be more acceptable. However, Linder, Cooper and Jones (1967) recently demonstrated that the concept of evaluation anxiety may be irrelevant to Cohen's (1962) findings. When Rosenberg (1965) attempted to eliminate evaluation anxiety by separating the attitude manipulation and attitude measurement conditions, he inadvertently reduced the subject's freedom in deciding whether or not to participate. Any restriction on a person's freedom to act serves as a justification for one's behavior. Linder et al. (1967) suggested that the subject's act of walking down the hall to see what the other experiment was about, as the experimenter in Rosenberg's (1965) experiment had suggested, was a form of commitment. That is, once the subject contacted the second

experimenter, he was effectively bound to agree to any reasonable request. The reward only acted as a bonus to the subject's prior commitment-- thereby inducing an incentive effect (Freedman, 1963; Jones & Cooper, 1966). A proper test of dissonance theory requires that the incentive must be one of the conditions potentially affecting the decision to comply and not simply a reward for already having done so. In one experiment, Linder et al. (1967) offered the subject \$0.50 or \$2.50 to write a CA essay concerning the college administration's refusal to permit certain controversial individuals to give lectures on campus. Some subjects were told that they were free not to participate and would receive an experimental credit in any case. Other subjects were not provided this opportunity to refuse to participate. Before they began writing, the subjects in the latter condition were told that they would receive \$0.50 or \$2.50 for their time. Subjects completed an attitude rating scale for the same experimenter who paid them. As predicted, the findings supported dissonance theory in the free-choice condition and incentive theory in the no-choice condition. Linder et al. (1967) then replicated Rosenberg's (1965) experiment, using the same procedure and instructions, but with the addition of a free-choice condition. Thus, in one condition the subjects were given Rosenberg's (1965) instructions but in a second condition the subjects were given--in addition to the regular instructions--a warning not to participate in the second experiment until they heard what the second experimenter had to offer. The findings were the same as those of the preceding experiment where evaluation anxiety was not controlled. There were no differences among

the conditions in essay length, organization or persuasiveness. Furthermore, the length of the essay, its organization or its persuasiveness were not related to the magnitude of attitude change.

Collins and Helmreich (1965) failed to demonstrate any differential effects of reward on attitude change when CA essays were written under "process" or "consequence" instructions. They held that dissonance theory puts major emphasis on the subject's perceptions of the consequences of an act rather than on the response process. So, having a subject write a CA persuasive essay, with the emphasis on the eventual impact such an essay would have on an unsuspecting individual, would be a condition of high dissonance. Incentive theory emphasizes the effects of performing an act rather than the consequences of the act. An emphasis on objectivity in writing a CA essay should make salient the soundness of the arguments which should thereby maximize self-persuasion. Subjects were offered \$0.50 or \$2.00 to write a CA essay describing the positive aspects of some bitter tasting solutions. Under process instructions, subjects were told to think about the solutions they had tasted and to try to find aspects of them which were pleasant, exotic and not bitter tasting. Under consequence instructions, subjects were told to write essays that would persuade people that the solutions were pleasant, exotic and not bitter tasting. Incentive size had no effect on attitudes, but subjects in the "process" condition rated the solutions as significantly less bitter than subjects in the "consequence" condition. The amount of attitude change was correlated with the extent of essay positiveness .85 in the process and -.50 in the consequence conditions. Rosenberg (1966) has noted that these correlations support his notion that attitude

change in the CA situation is mediated through responsiveness to the merits of the arguments. The consequence instruction would induce a subject to use distorted and biased arguments selected for their persuasiveness rather than their veracity. The more a subject goes beyond what he believes to be valid arguments, the more positive the essay will be rated but the more cognizant he will be of the untruths necessary to communicate such positivity. The process instructions, however, induce a self-introspection set which assures the personal meaningfulness and the self-persuasiveness quality of the arguments included in the essay.

Nuttin (1966) replicated the Festinger and Carlsmith (1959) experiment but failed to demonstrate any consistent relationship between reward size and attitude change. In a consonant control condition, not included in the original Festinger and Carlsmith (1959) experiment, he found that subjects who had told other subjects the truth enjoyed the experiment significantly more if they were in the low pay rather than the high pay condition. Interviews with the subjects indicated that those in the high pay condition felt a great deal of guilt and embarrassment about accepting the large reward for such a simple task. Nuttin (1966) suggested that these subjects rated the task as very boring in order to justify their receiving such a large sum of money. These findings support the incentive theorists contention that emotional responses can interfere with the reinforcing effects of a large reward. A traditional dissonance theory interpretation cannot provide an alternative since the role playing was of a consonant, and not dissonant nature. In the dissonant role playing conditions there was a non-significant tendency for

the findings to support the dissonance theory predictions. Incentive theory would hold that in the dissonance condition the subject had to lie to another subject, so the large reward would seem at least somewhat more reasonable. In fact, when asked to indicate an appropriate level of pay for serving in psychology experiments, subjects in the dissonance conditions suggested higher levels of pay than did those in the consonant control conditions.

Gerard (1967) also considered the possible effects that differences in the meaning of money might hold for different groups of subjects. He suggested that although Rosenberg (1965) and Cohen (1962) used approximately identical pay rates for their studies, the fact that the subject populations differed in their initial levels of affluence could account for the opposing findings. Presumably, Cohen's subjects, attending an Ivy League college, would view the low pay conditions as more inadequate than would the less affluent subjects, from a state college, used by Rosenberg. In the latter case, the incentive effect could be expected because the subjects never were really asked to labor under conditions of (subjectively) low justification. Gerard (1967) insured that all subjects would experience the same feelings of being insufficiently, sufficiently, or more than sufficiently rewarded for their efforts. In a footnote to Gerard's task instructions, the subjects read that the "Survey Research Institute," for whom they were asked to write a CA essay, had decided that \$2.00 would be a fair pay rate for the essays. However, when the subject had agreed to write the essay the experimenter offered some of the subjects only \$0.50, saying that this was all that could be

paid since some unexpected expenses had arisen. Other subjects were given \$5.00 with the explanation that there was an unanticipated cash surplus in the account for paying subjects and this was thought to be the most fair way to distribute this excess cash. One group of subjects was given the \$2.00 payment as the footnote in the instructions promised. In another condition the subject's instruction sheet had no footnote or any other mention of payment for performance of the task. Subjects were actually given the \$0.50, \$5.00 or \$2.00 after they had decided to write the essay. They were told that this was the Institute's payment for the task which the experimenter had forgotten to mention earlier. It was predicted that when the subjects received a smaller reward than they had expected, the dissonance theory prediction would be supported. When they received a larger reward than they had expected, the incentive theory prediction should be supported. In the no-expectation condition, when the subjects did not know that they would be paid at all until after they had made their decision to write, no definite predictions were made. There were no significant differences between the expectation and the no-expectation conditions but there was a significant effect due to the reward levels. The latter findings supported the incentive theory predictions. It is not surprising that the dissonance theory predictions were not supported since the subjects committed themselves before being informed of the true pay level. Furthermore, the subjects receiving \$0.50 when they expected \$2.00 might well be incensed that the experimenter did not mention the change in the pay rate until after they had agreed to write the essay. Despite the methodological difficulties, Gerard's experiment is important because it represents

the first time that an experimenter has actively manipulated the subject's interpretation of the different reward rates. Furthermore, in specifying the degree of adequacy of the pay rate, a justification was thereby provided so the subject knew why he was being overpaid, underpaid, or fairly paid. Experimenters have previously assumed that the subject would accurately judge (i.e., agree with the experimenter's judgement) how much his task was worth in relation to the proposed pay rate. The importance of standardizing the interpretation of a pay rate has been demonstrated by Adams (1965), at least for non-counter-attitudinal behavior. Adams (1965) has shown that individuals tend to have different views of a pay rate depending on whether they like or dislike their job. Thus, a man working on a disliked job will tend to view a low pay rate as adequate if he has no immediate possibility of getting a better job. But, this individualized distortion of the adequacy of pay rates does not hold if there is a standard which he can use for comparison. In the latter case, the standard will act as an anchor, thereby disallowing any casual distortion of the adequacy of pay rate as a means of reconciling one's position in particularly pleasant or unpleasant working situations. Alternatively, the subject can distort the nature of his job if a distortion of the pay rate is not possible. Thus, a subject being overpaid for the simple adding of columns of one digit numbers may describe his job as "mathematics" rather than simple addition (Adams, 1961).

The Problem

The preceding discussion has indicated that the research findings supporting incentive theory may have little relevance to the dissonance

theory predictions since, through faulty experimental techniques, the dissonance aroused was minimal. The research findings supporting dissonance theory are, similarly, of little relevance to incentive theory since these studies lack the controls for the possible effects of interfering emotional responses as suggested by Janis and Gilmore (1965) and Rosenberg (1965). No research has taken into consideration the fact that the process of attitude change postulated by dissonance theory in no way precludes the simultaneous process of attitude change postulated by incentive theory.

Dissonance theory bases its predictions solely on the fact that an individual has committed himself to perform, or has performed, an act which is discrepant with his underlying beliefs. As Weick (1966) has pointed out, the fact that a subject has agreed to perform an act may be independent of his intentions to do a good or a bad job. While the subject's intentions and his performance are generally irrelevant to the dissonance theorists, they represent the core of the attitude change process according to incentive theory. On the other hand, the fact that the subject writes a CA or a proattitudinal essay is irrelevant to incentive theorists since they disregard, in their predictions, any possible effects due to the subject's conflict between his behavior and his attitudes. For a simple or very brief task, the effects of the subject's involvement in, and the quality of, his task performance should be minimal. At least one incentive theorist (Rosenberg, 1966) suggests that under such conditions, a dissonance theory prediction would be more appropriate than an incentive theory prediction. It seems, however, that for a more complex task--such as essay writing--it should be necessary to

take account of both incentive theory and dissonance theory predictions, if the experiment is appropriately designed.

Another problem in this area of research is exemplified by Brehm's (1965) criticism of the Elms and Janis (1965) study. It will be recalled that Brehm (1965) had suggested that under very high dissonance conditions, the subject may resist attitude change, in favor of some other mode of dissonance reduction. Thus, Brehm was suggesting that there may be limits to the commonly accepted positive relationship between the magnitude of dissonance and the magnitude of expected attitude change. Other than the ambiguous sponsorship conditions of the Janis and Gilmore (1965) and Elms and Janis (1966) studies, none of the other essay writing studies have used such a potentially high dissonance condition as that achieved by combining a low pay rate with a negative sponsor. However, as previously noted, subjects in the above two studies may not have actually written essays which could be considered to be CA if they were in the positive sponsorship conditions; also, these studies did not include a neutral sponsorship condition to make their results comparable with other research.

The present study was designed to provide conditions for maximal dissonance arousal while, at the same time, minimizing the effects of evaluation anxiety and other forms of unanticipated interfering emotional responses. Subjects wrote CA essays under circumstances which varied in the degree to which such behavior could be explained or justified. Justification was varied by having a sponsor who agreed, disagreed, or

was neutral toward the subject's attitude¹ and by offering the subject one of three sums of money as payment for the essay writing task. Three levels of monetary incentive and three types of sponsors (positive, neutral and negative) were used to establish the various levels of justification for the subject's acts. Combining the incentive and the sponsorship conditions permitted a test of the dissonance-incentive attitude change processes over greater extremes of high and low justification than had previously been done. The specific predictions and the rationale for them are as follows.

In the present study, subjects wrote CA essays under conditions of extremely low justification (low pay, negative sponsor), moderately low justification (fair pay, negative sponsor or low pay, neutral sponsor), adequate justification (fair pay, neutral sponsor), and over justification (high pay, positive sponsor). Under the conditions of extremely low justification it was predicted that the dissonance effect would tend to be mitigated by the conditions of low reinforcement. That is, just as the incentive theorists attribute the occasional lack of attitude change under conditions of high pay because the subject is made to feel hostile and defensive, it seems reasonable that an excessively low pay rate could engender the same interfering emotional responses, resulting in a low magnitude of attitude change. Furthermore, the subject should not be expected to write a very persuasive essay, and McGuire's inoculation theory (1964) would predict that when a subject

¹Referred to, respectively, as the positive, negative, or neutral sponsor.

is exposed to arguments which he can easily refute, the original attitude may become more firmly stabilized. It was expected that these factors would diminish the effects of dissonance stemming from the performance of the CA act, thereby resulting in little or no attitude change.

It was predicted that there would be more attitude change in the moderately low justification condition than in the extremely low justification condition. It was expected that the subjects would write better essays, become more involved in the task, and would be less hostile when the conditions under which they participated were less than completely negative. Concomitantly, the magnitude of dissonance would be relatively high, thereby adding to the aforementioned impetus toward attitude change. Furthermore, it was predicted that the magnitude of attitude change expected under these conditions of moderately low justification would be greater than that expected under conditions of adequate justification. Although, in the latter case, the subjects may be more involved in the task, and the possible emotional responses arising from low pay and disliked sponsors may be virtually eliminated under these conditions of adequate justification, there should be absolute no dissonance due to the performance of a CA act. It was felt that eliminating the need for the subject to justify the performance of a CA act would more than offset the improvements in task performance over that in the moderately low justification condition.

Under conditions of over justification, it was predicted that the magnitude of attitude change would again increase, relative to the

smaller magnitude of change expected in the moderate justification condition. This would be due not only to the subject's increasing involvement in and the persuasiveness of the essays written but also to the generalization of positive reinforcement effects stemming from the condition of over justification. When the subject has more than adequate reasons for performing a task, he receives, in a sense, more than he expends. Such a desirable state of affairs would, presumably, have a positive effect on all of the activities associated with it.

METHOD

Subjects

The subjects used in this experiment were selected from that portion of the male population of an introductory psychology class who were in favor of (pro-war) the United States intervention in Viet Nam. The question designed to measure this attitude (Appendix A) was part of a large test battery which most of the students in the course completed during the first meeting of their psychology class. On an 11-point scale, where 11 and 1 represented the extreme pro-war and extreme anti-war positions respectively, the median response for all freshman males was 8.69. The subjects used in this experiment scored between 7 and 11, the median response being 9.61. The fact that anti-war and neutral attitudes were in evidence on the campus provided viable alternatives for anyone considering changing their pro-war attitude. Eighty-one subjects participated in the experiment. Four subjects refused to participate after they learned that they had to write an anti-war essay. Two of these subjects were in the low pay-negative sponsor condition, one each was in the fair pay-positive sponsor and the high pay-neutral sponsor conditions. All four of the subjects refused to participate because they felt that such an action would compromise their real beliefs. They did not have extremely high or extremely low pro-war scores on the attitude premeasure.

Procedure

Subjects were escorted into the laboratory and were asked to take a seat at a writing table. The experimenter then told the subject that he would be paid for his participation instead of receiving the usual

experimental credit because this experiment was not being conducted by the psychology department. The subject was then told that he did not have to participate if he did not want to. He read the task description and the instructions lying on the desk in front of him. He was then to tell the experimenter, who would be in the adjoining room (out of sight of the subject) if he wanted to proceed with the task. The instructions (Appendix B) indicated that the subject would receive \$0.50, \$1.50, or \$4.50 for writing an essay opposing the war in Viet Nam. The organization paying for the essay was represented as either a pro-war group, anti-war group or a non-aligned research group. The organization sponsor provided, in the written instructions, an explanation of how these essays would be used to further the interests of the group. A footnote (Appendix C) on the instruction sheet included reasons that would assure that the subjects in the \$0.50, \$1.50, and \$4.50 conditions perceived themselves as being offered, respectively, inadequate pay, adequate pay, or excessive pay to write the essay.

When the subject told the experimenter that he would like to proceed with the task, the experimenter paid him the money while mentioning that he, personally, was not a member of the sponsoring organization but was only employed by them. The experimenter then reminded the subject that the instructions called for a persuasive essay supporting an anti-war position and that he could work on the essay for as long or as short a time as he liked. To impress upon the subject his complete freedom, the experimenter mentioned that although he would be working in the adjoining room, the subject need not check with the experimenter when he

had completed his essay and wanted to leave. Before the subject began to write, he was given a short questionnaire (Appendix D) concerned with the perceived adequacy of pay, how he liked working for the organization, and how much he felt he was forced into participation. He was told that the psychology department always had students complete such questionnaires when they were being hired by outside organizations not connected with the department. This questionnaire was deposited, by the subject, in a locked box with a large "Psychology Department: authorized personnel only" label affixed to it. When the subject was leaving, having completed his essay, the experimenter would come to the door and thank him, saying that his essay would be very much appreciated. The subject's attitude toward the United States intervention in Viet Nam was measured, as he was leaving the building, by a female graduate student who was presumably stopping the subjects from all experiments and having them complete a number of questionnaires. The subject completed the same "current events questionnaire" (Appendix A) which included the question on Viet Nam, that he had taken at the beginning of the school year. He also indicated, on a 5-point rating scale, how much he enjoyed the experiment, how much he liked the experimenter and how adequate he felt the pay rate to be (Appendix E).

Summary of the Design

A three by three factorial design was used, with three levels of monetary incentive (\$0.50, \$1.50, and \$4.50) and three levels of sponsorship (positive, negative and neutral). The appropriate combinations of monetary incentive and sponsorship defined the following levels of

justification that were of direct interest for this study. The negative sponsor paying \$0.50 represented the extremely low justification condition. The neutral sponsor paying \$0.50, or the negative sponsor paying \$1.50 represented the moderately low justification condition. The neutral sponsor paying \$1.50 represented the adequate justification condition. The positive sponsor paying \$4.50 represented the over justification condition. All of the cells in the 3 X 3 design were filled (9 per cell) but only those contributing to the above levels of justification were of interest for the problem under investigation.

RESULTS

The attitude change scores, obtained by subtracting each individual's pre-experimental attitude score from his post-experimental attitude score, were subjected to an analysis of variance (Table 1). There were no significant findings. The results of the Duncan Multiple Range Test (DMRT), used as a post hoc method for the comparison of mean attitude change scores, are reported in Table 2. The mean attitude change across the money variable, and averaged over the sponsorship variable, was tested for the possible significance of the linear or curvilinear components. Neither of these components were significant (Appendix F). Orthogonal comparisons were used to examine certain sets of pre-selected means. No significant findings were observed (Appendix G). The post-experimental attitude change scores were subjected to an analysis of covariance, using the pre-experimental scores as the covariate. There were no significant findings (Appendix H).

Table 1

Summary of the Analysis of Variance of
the Attitude Change Scores

Source of Variation	df	Mean Square	F
A: Sponsorship	2	2.457	
B: Money	2	16.531	
A X B	4	18.568	
Error	72	9.691	

Table 2

Mean Attitude Change Scores Under
Each Experimental Condition

	Negative Sponsor	Neutral Sponsor	Positive Sponsor	Money: averaged over sponsorship
\$0.50	1.111ab	4.000a	2.889ab	2.667
\$1.50	2.333ab	1.444ab	0.333b	1.370
\$4.50	4.000a	1.778ab	2.556ab	2.778
Sponsorship: averaged over money	2.481	2.407	1.926	2.272

Note: Cells having a subscript in common are not significantly different at the .05 level by the Duncan Multiple Range Test.

The pre-writing adequacy of payment scores were subjected to an analysis of variance (Table 3). The main effect of money was significant ($F = 54.40$; $df = 2,72$; $p < .01$). This finding indicated that the intent to induce feelings in the subject of being underpaid, fairly paid, or overpaid was successful. Neither the nature of the sponsoring organization paying the money nor the interaction between sponsorship and money were significant. The differences between the cell means were examined by using the DMRT (Table 4). Without exception, each set of three means under any one money condition differed at the $p < .05$ level from the means under any one of the other two money conditions. None of the means (representing different sponsoring organizations) within any one of the money conditions differed significantly from one another.

Table 3

Summary of the Analysis of Variance of Responses
on the Pre-Writing Adequacy of Payment Question^a

Source of Variation	df	Mean Square	F
A: Sponsorship	2	1.037	54.400*
B: Money	2	33.778	
A X B	4	0.315	
Error	72	0.654	

^aAppendix D: How adequate do you feel this pay rate to be (for yourself)?

* $p < .01$

Table 4

Mean Response to the Pre-Writing Adequacy of Payment
Question Under Each Experimental Condition

	Negative Sponsor	Neutral Sponsor	Positive Sponsor	Money: averaged over sponsorship
\$0.50	2.556a	2.889a	2.778a	2.741
\$1.50	3.556b	3.667b	5.000b	3.630
\$4.50	4.556c	5.000c	5.333c	4.963
Sponsorship: averaged over money	3.556	3.852	3.926	3.778

Note: Cells having a subscript in common are not significantly different at the .05 level by the Duncan Multiple Range Test.

The post-writing adequacy of payment scores were subjected to an analysis of variance (Table 5). The main effect of money was significant ($F = 15.36$; $df = 2, 72$; $p < .01$). There were no other significant findings. The DMRT was used to examine the differences among the cell means (Table 6). In contrast to the pre-writing adequacy of payment scores, there were no significant differences among the different levels of payment under the positive sponsor condition. Furthermore, under the neutral sponsor and the negative sponsor conditions, the \$4.50 pay rate was considered to be significantly more adequate than both the \$1.50 and \$0.50 pay rates.

Table 5

Summary of the Analysis of Variance of Responses
on the Post-Writing Adequacy of Payment Question

Source of Variation	df	Mean Square	F
A: Sponsorship	2	1.037	15.36*
B: Money	2	11.704	
A X B	4	0.963	
Error	72	0.762	

Note: Appendix E: If you were in one of the experiments that paid cash, how adequate do you feel this pay rate to be (for yourself)?

* $p < .01$

An adequacy of payment change score was obtained by converting the above two scores to a common scale and subtracting the post-score from

Table 6

Mean Response to the Post-Writing Adequacy of Payment
Question Under Each Experimental Condition

	Negative Sponsor	Neutral Sponsor	Positive Sponsor	Money: averaged over sponsorship
\$0.50	2.556de	2.333e	3.111bcde	2.667
\$1.50	2.778cde	2.778cde	3.333abcd	2.963
\$4.50	3.889ab	4.222a	3.667abc	3.926
Sponsorship: averaged over money	3.074	3.111	3.370	3.185

Note: Cells having a subscript in common are not significantly different at the .05 level by the Duncan Multiple Range Test.

the pre-score. These change scores were subjected to an analysis of variance (Table 7).¹ The main effect of money was significant ($F = 3.85$; $df = 2, 72$; $p < .05$). The means of Table 8 indicate that subjects in the low pay conditions rated the payment as more adequate after writing. Subjects in the fair pay condition did not change their rating of the money after writing. Subjects in the high pay condition tended to consider the payment as being less adequate after writing. The interaction between sponsorship and money was also significant ($F = 2.67$; $df = 4, 72$; $p < .05$).

¹Cochran's Test indicated that the variances between the cells were heterogeneous ($C = .375$, $p < .01$). The data were transformed ($\log X + 1$) to make the variances homogeneous ($C = .210$, $p > .05$). This transformed data was subjected to an analysis of variance (Appendix I), but the significance levels did not differ from those of the untransformed data.

Table 7

Summary of the Analysis of Variance of
the Adequacy of Payment Change Scores

Source of Variation	df	Mean Square	F
A: Sponsorship	2	.016	
B: Money	2	.103	3.88*
A X B	4	.071	2.67*
Error	72	.027	

* $p < .05$

Table 8

Mean Adequacy of Payment Change Score Under
Each Experimental Condition

	Negative Sponsor	Neutral Sponsor	Positive Sponsor	Money: averaged over sponsorship
\$0.50	-.085bc	.015ab	-.159c	-.076
\$1.50	.037ab	.056ab	-.056bc	.012
\$4.50	.004abc	-.011abc	.133a	.042
Sponsorship: averaged over money	-.015	.020	-.027	-.007

Note: Cells having a subscript in common are not significantly different
at the .05 level by the Duncan Multiple Range Test.

The means (Table 8) and the form of the interaction (Figure 1) indicate that while subjects in the positive sponsor conditions tended to devalue the high pay and increase the value of the low pay, subjects working for either the neutral or negative sponsor showed little change in their valuation of the payment. This interaction is of particular importance because it indicates that the subjects were reacting to the differences in sponsorship, one of the principal independent variables in the study. It also indicates that the main effect of money was not simply due to a regression toward the mean over time. A DMRT (Table 8) indicated that the subjects in the \$4.50-positive sponsor condition had a larger adequacy of pay change score than did either the subjects in the \$1.50- and the \$0.50-positive sponsor conditions, or the \$0.50-negative sponsor condition.² Furthermore, subjects in the \$1.50-negative or neutral sponsor conditions had significantly larger adequacy of payment change scores than did the subjects in the \$0.50 positive sponsor conditions.

The subjects' responses to the question, "How do you feel about working for this organization?" were subjected to an analysis of variance (Table 9). The main effect of money was significant ($F = 4.61$; $df = 2, 72$; $p < .05$). The DMRT indicated that the subjects in the \$4.50 condition responded more positively to this question than did the subjects in either the \$1.50 or the \$0.50 conditions (Table 10).

²The larger (more positive) the adequacy of payment change score, the greater is the subject's pre-writing rating compared to his post-writing rating. The smaller (more negative) the adequacy of payment change score, the greater is the subject's post-writing rating compared to his pre-writing rating.

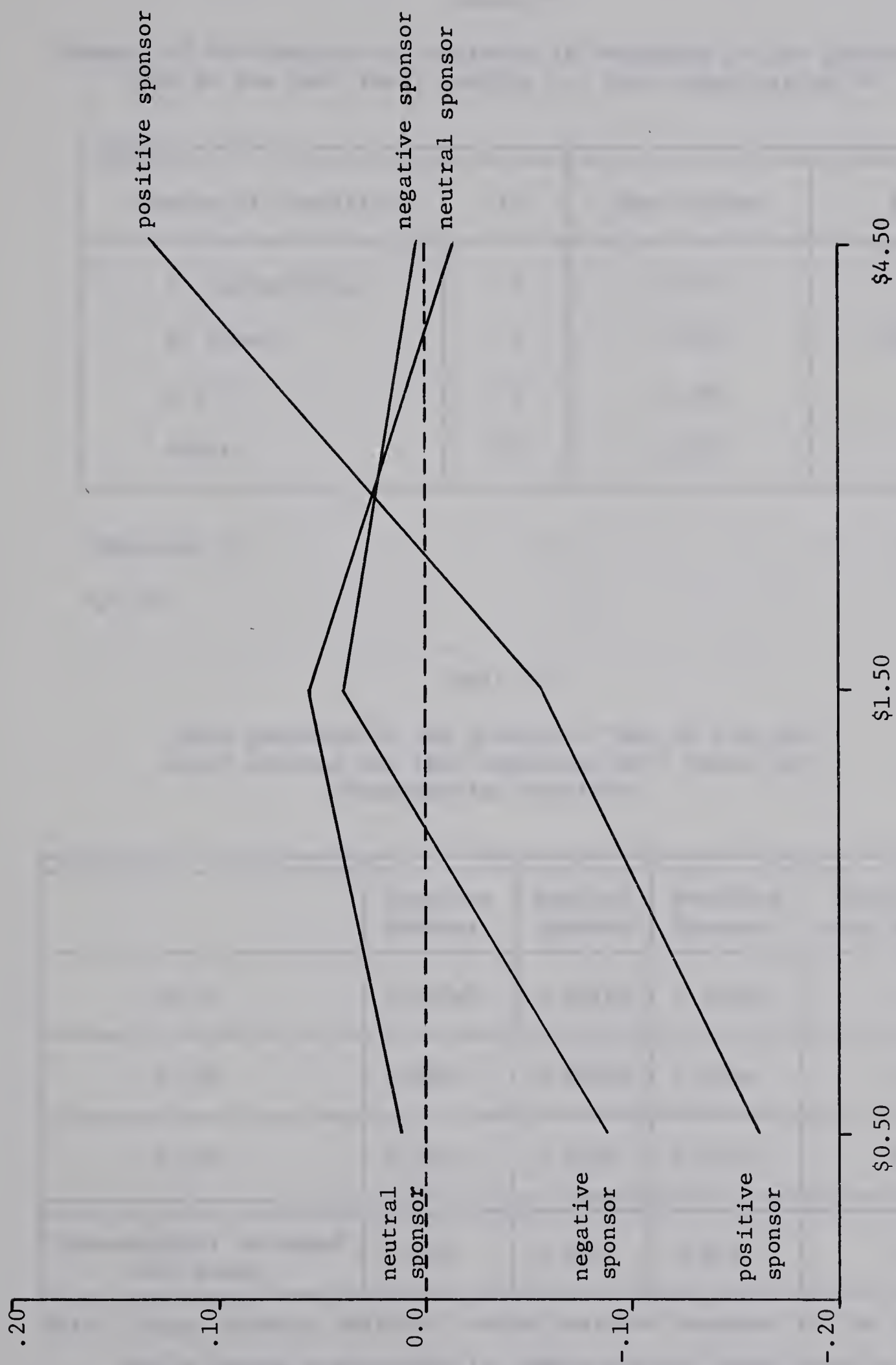


Figure 1: Sponsorship X Money Interaction of Adequacy of Payment Change Scores (Prescore minus Postscore)

Table 9

Summary of the Analysis of Variance of Responses to the Question:
 "How do you feel about working for this organization?"^a

Source of Variation	df	Mean Square	F
A: Sponsorship	2	0.778	4.61*
B: Money	2	4.704	
A X B	4	1.482	
Error	72	1.017	

^aAppendix D.

* $p < .05$

Table 10

Mean Response to the Question: "How do you feel
 about working for this organization?" Under each
 Experimental Condition

	Negative Sponsor	Neutral Sponsor	Positive Sponsor	Money: averaged over sponsorship
\$0.50	3.667ab	3.667ab	3.333ab	3.556
\$1.50	2.889b	3.889ab	4.000a	3.593
\$4.50	4.333a	4.333a	4.222a	4.296
Sponsorship: averaged over money	3.630	3.963	3.852	3.815

Note: Larger numbers indicate a more positive response to the above question.

Cells having a subscript in common are not significantly different
 at the .05 level by the Duncan Multiple Range Test.

The subjects' responses to the other questions on the two experiment evaluation questionnaires (Appendices D and E) were subjected to an analysis of variance (Appendices J, K, L). No significant findings emerged.

The number of arguments in each essay, the number of words in each essay, and the number of minutes it took to write each essay were each enumerated and subjected to an analysis of variance (Appendices M, N, O). No significant findings emerged.

All of the dependent variables and the pre-experimental attitude scores were correlated with one another (Appendices P, Q, R). Correlations were calculated over all conditions, for each level of money and for each level of sponsorship. A number of significant correlations emerged, but none of them were worthy of discussion.

DISCUSSION

Contrary to prediction, subjects in the moderately low justification and in the excessively high justification conditions did not change their attitude significantly more than did the subjects in the very low justification and in the adequate justification conditions. The results have not supported the hypothesis, but neither have they supported the predictions which would have been derived from either dissonance theory or incentive theory. The latter point is important since this study was particularly designed to avoid violating the assumptions of either theory while minimizing the biases of experimental design which would favor one theory over another.

Except for the positive sponsor condition, which will be considered later, the variables used in this study to manipulate justification have been used successfully in several other studies (Appendix S). In the present study, the responses to the pre-writing adequacy of payment question indicated that the manipulation of the underpayment, overpayment and fair payment conditions was successful. Although differential response to the sponsorship conditions did not appear as a main effect except at the $p < .10$ level (Appendix L), it was evident in the sponsorship by pay rate interaction in the adequacy of pay change score analysis (Table 7, Figure 1). All of the studies in this area have utilized this same general design, only the outcomes have differed. The present study deviates from the general design in a number of ways. The rationale for introducing some of these differences and the possible effects of

them on either the dissonance or reinforcement processes will be discussed.

One purpose of the pre-experimental attitude measure was to obtain a more accurate indication of attitude change than would be possible in a post-measure only design, common to virtually all of the other studies in this area. Also, without a pre-measure,¹ experimenters have had to ask the subject, just before assigning the essay, whether he was for or against the issue. Such information is needed to be assured that the subject is really writing a CA essay. However, having given this information to the experimenter may well arouse "evaluation anxiety" (Rosenberg, 1965) or other "interfering emotional responses" (Janis & Gilmore, 1965) in the subject when he subsequently agrees to act counter to his publicly stated position. The one study which did not collect this pre-writing information found no differences in attitude change between the \$1.00 and \$20.00 payment conditions (Janis & Gilmore, 1965). Of course, when the subject has stated that he is for or against the issue, his subsequent CA act will appear to be less inconsistent (in the eyes of the knowledgeable experimenter) if the extremity of his response is (falsely) minimized. However, the better the justification provided for performing the act, the less unreasonable it would be for the subject to admit holding an extreme attitude which was inconsistent with his act. These effects are an unmentioned, and

¹Note that the pre-measure referred to here was taken in a classroom setting at the beginning of the school year in conjunction with a number of other tests.

presumably irrelevant aspect of the usual dissonance theory formulation. Thus, it was felt that they should be eliminated by means of the pre-measure so that the incentive theorist's assumptions regarding the biasing effects of irrelevant emotional arousal would not be violated. This precaution did not, though, take into consideration the possibility that the effect of the pre-writing interview used by other researchers was to increase the saliency of the issue in general and the subject's own position in particular. The effect might possibly be to make the subject more aware of the inconsistent nature of the act he was about to perform. Feldman (1966), McGuire (1966b), and Singer (1966) have recently pointed out that the saliency of the inconsistent act to the subject is probably a critical, although very neglected, variable for cognitive consistency theories. If, in the present study, the inconsistent nature of the act of essay writing was not salient to the subject, then the difference between the predicted attitude change scores of the supposedly high and low dissonance conditions would have been reduced. This effect could have partially accounted for the lack of significant findings.

In this study, the subjects were told that there were no maximum or minimum limits on either the length of their essay or on the amount of time they chose to spend working on it. Other studies usually stated specified limits on the amount of time which the subject could spend writing his essay. For dissonance theory, the length of the essay and the amount of time spent writing the essay are not considered to be important variables in the prediction of attitude change. But, for

incentive theory the quality and content of the essay are assumed to play an important part in affecting attitude change.

However, it is important to note that the essays in the high justification conditions do not necessarily need to be of a measurably higher quality than the essays in the lower justification conditions in order to validate the incentive theory itself. Even though effort and involvement on the part of the subject may increase with increasing justification, the individual differences in ability may obscure the effects of these postulated processes over different experimental conditions. Alternatively, it may be that the attitude change process is simply one of association between a particular level of justification and an issue. At any rate, only Collins and Helmreich (1965), Janis and Gilmore (1965) and Rosenberg (1965) found any difference between conditions in the quality of their subjects' essays. In the present study, it was believed that eliminating the time restrictions would permit a reasonably accurate measure of effort and would be most likely to allow possible differences in essay quality to emerge. The results indicated, however, that there were no significant differences in writing time, in essay length, or in essay content (number of arguments) among the experimental groups.

It is possible that the effects on attitude change of being permitted an unlimited amount of writing time may relate back to the problem of salience discussed above. That is, it may be that the subjects were very cognizant of the inconsistency of their behavior when they first agreed to write the CA essay. As they wrote down, or thought of, the first few plausible CA arguments, their feelings of inconsistency may have been at

a peak. However, continued exposure to such arguments, especially to the weaker arguments which are likely to be considered after the obvious strong arguments are written, may very well elicit an apathetic response to the entire question. This effect may very well be compounded by the subject's fatigue, his lack of new ideas and his concern about the "appropriate" length of time he should spend writing. In a different context, the dissonance theorists have considered this possibility in their concern for the decay of dissonance over time. For example, in a study concerning the reevaluation of job alternatives, Walster (1964) found that subjects exhibited a typical dissonance reduction response in their reevaluation of the jobs when the reevaluation occurred fifteen minutes after their decision. However, when the reevaluation was done ninety minutes after the decision, the subjects had reverted to their pre-decision evaluation levels. Whatever the process involved may be, Walster's (1964) findings imply that writing time in the present type of experiment may be a critical variable.

Similarly, the effect of different levels of reinforcement could also be mitigated by the amount of time spent writing. That is, the subject receives the reinforcement and then begins writing. By the time he has finished writing, it may be that his concern with completing the task may simply obscure the more direct association between reward and issue. Such an association would probably be most obvious if the act were precise and brief, followed immediately by the reward. The detrimental effects of delaying reinforcement or obscuring the relationship between response and reinforcement are well documented in all

introductory psychology texts. But in the area of CA essay writing, such effects are never taken into consideration.

It is also possible that when subjects do not feel the pressure of a time limit they may spend more time considering, covertly, the counterarguments to their written arguments. Freedman and Sears (1965) have, for example, offered evidence indicating that subjects may resist attitude change attempts by counterarguing, if given the opportunity. Similarly, McGuire's (1964) theory of inoculation is based on the assumption that subjects will covertly counterargue if they feel that their beliefs are being challenged. While counterarguing would do little to reduce the subject's feelings of inconsistency about performing the act, it may weaken the predicted (Rosenberg, 1965) development of a favorable association between the written argument and the payment received. It would also interfere with the "biased scanning" principle (Janis & Gilmore, 1965), wherein attitude change is presumably a function of increasingly one-sided concentration and involvement in a position as the payment for the act becomes more substantial. Counterarguing, made possible by the absence of time pressure, may, then, reduce the magnitude of predicted attitude change under reward conditions which are expected to elicit positive affect and/or biased scanning.

This study also differed from others in this area in the type of issue used.² Issues are typically selected on which virtually the entire student body holds the same position, varying in intensity of

²Appendix S lists the issues used by other studies in this area.

attitude rather than direction of attitude. An opposing position is usually held by authorities, such as the college administration. In the present study, there was no such feeling of peer group unanimity on the war issue. Students usually guessed that the student body was equally divided on this issue. Furthermore, positions on this issue may have reflected a rather abstract set of values and probably were not a function of a preference for, or resistance to, certain events which would have a concrete effect on one's behavior. Issues in other studies frequently possessed this latter type of relevance for the students. Since no clearly defined vested interests are involved in a disagreement concerning values, it would seem very difficult to offer concessions to the other's point of view. Furthermore, modifying a value would probably require an adjustment in the complex of attitudes that may be associated with that value (Katz & Stotland, 1959; Kelman, 1958). On a less general level, it has been demonstrated that changing one's attitude eventuates in the change of related attitudes (McGuire, 1960; Rosenberg, 1965; Tannenbaum, 1967). However, in considering the preferred modes of dissonance reduction, many theorists (Abelson & Rosenberg, 1958; Cartwright & Harary, 1956; Festinger, 1957; Rosenberg, 1960; Zajonc, 1960) suggest a "least effort" principle (e.g., that cognition will change which is most isolated from relational ties to other cognitions and needs). Thus, Brehm (1965) has suggested that in some cases, attitude change may simply not be a viable mode of dissonance reduction when a person is deeply committed to a position. In view of this suggestion, it is important to note that despite the unanimity of the population regarding the positions held on the issues used in other

studies,³ the mean response of the control groups in these studies was only 7.7 on an 11-point scale. In the present study, the mean response of the male students in introductory psychology to the war issue question was 7.4 on an 11-point scale. However, the mean response of the students who actually participated in this study was 9.7. These extremists (relative to the subjects used in other studies) were used so that the required essay would be an unequivocally dissonant act for the individual writing it.⁴ However, in consideration of Brehm's suggestion concerning the "least effort principle", perhaps the subjects found it more convenient to reduce dissonance in other ways than attitude change. For example, the significant sponsorship by pay rate interaction of the adequacy of payment change scores may indicate that the subjects were reacting to the independent variables used in this study by other means than attitude change. However, this interaction hardly deserves a post hoc speculative interpretation, since behavior on this dependent variable is not predictably related to the hypothesis under consideration. Although there has been some empirical work by Rosenberg and Abelson (1960), Steiner and Johnson (1962) and Steiner and Rogers (1963) on the problem of modes of dissonance reduction, these findings are quite ambiguous. In a collection of essays on cognitive consistency theory (in Feldman, 1966), McGuire (1966b) and Pepitone (1966) consider

³Ibid.

⁴This is not to say that response extremity is equivalent to issue involvement, but only that it may be some indication of involvement. The problem of involvement is discussed in the following chapter.

one of the major problems in dissonance theory to be that of defining and predicting the modes of dissonance reduction available to a subject.

Although the incentive theorists have not raised this possibility, the "modes of reduction" problem associated with dissonance theory may also apply to incentive theory. That is, it may be that the more firmly a person holds an attitude, the more likely it is that the reinforcing properties of the situation will be manifested in the individual's response to the peripheral aspects of the situation, rather than to the issues at hand. Assuming suspicions are absent, the person could, for example, enjoy the experiment (as in Appendix K), or like the organization more (as in Table 9) as the pay rate increases without showing any tendency to change his firmly held attitude. On the other hand, the less important the attitude the more readily it may be expected to change in response to the associated reinforcement.

At any rate, there are theoretical and (minimal) empirical bases for suggesting that the subjects participating in this study tended to react to the dissonance and reinforcing aspects of the situation in other ways than by changing their pro-war attitudes.

CONCLUSIONS AND FURTHER RESEARCH

McGuire (1966a) has said of a dissonance theory hypothesis that while the empirical evidence for it was not overwhelming, it was an appealing proposition and deserved to be true. In the same sense, the lack of empirical evidence for the hypothesis in this study does not detract from the proposition that attitude change may be a response to both the dissonance arousing and reinforcing properties associated with the performance of the CA act. The incidence and nature of both the theoretical and empirical inconsistencies regarding the justification problem leads some credence, perhaps logically undeserved, to such a two-process approach.

The present study was designed in such a manner as to avoid violating the explicit assumptions of either dissonance theory or incentive theory. In the preceding chapter some of the possible inadvertent biasing effects of this design were examined. The crux of that examination was that the conceptual simplicity with which the dissonance theorists and incentive theorists have explained their findings may belie a complex understructure of essential, but implicit, assumptions. For example, in this study it was predicted that there would be very little attitude change under conditions of extremely low justification. However, if the inconsistent nature of one's act were made particularly salient, then a dissonance prediction of a large amount of attitude change may be more appropriate. The variable of salience could probably be varied inadvertently by the experimenter's expression of disdain or disgust, or, on the other hand, by a noncommittal "everyone does it" expression. None of the experimenters in this area have mentioned the possibly complex effects of salience, and

most of the experiments in dissonance theory have not explicitly dealt with it. In the recent book on cognitive consistency theory edited by Feldman (1966), McGuire, Pepitone, and Singer all include, in their papers, discussions of salience, while in the same volume the two essays by Rosenberg and Aronson, devoted entirely to the problem studied in this experiment, do not even mention it. Perhaps any attempt to base one's predictions on a combination of dissonance theory and incentive theory attitude change processes is fruitless without some indication of the degree to which the rewarding or inconsistent aspects of the situation are made salient to the subject. Despite the difficulties in manipulating salience beyond a crude three-level state, the emphasis on a dissonance and/or incentive dominance of behavior would at least represent some progress beyond the current attempts to identify the general truthfulness of one or the other theory. If salience did prove to be a crucial variable, the implications would be similar to those which would have been drawn if the hypothesis of the present study had been supported.¹ That is, of course, that the predictions of dissonance theory and incentive theory are generally complementary rather than antagonistic to one another. Dissonance theory hypotheses have acquired their much reputed "non-obvious" nature primarily because they are not readily derived from an incentive theory framework, not because they actually oppose incentive theory tenets. As McGuire (1966a)

¹An incidental but important implication stems from the consideration of decay and/or distraction which would be inherent in the salience concept. This would add additional dimensions to the unresolved "modes of reduction" problem.

has pointed out, it is only in the area of response to justification for performing a CA act that the theories have made distinctly opposing predictions.

Another avenue of research which may help resolve this conflict would concern attitude content and the subject's resistance to change. It was mentioned that the subjects may have held their attitudes toward the war so firmly as to block any realistic possibility of gross attitude change. Festinger (1957) predicted that the more important the person's attitude the more such an attitude would change under the appropriate dissonance arousing circumstances. However, importance for dissonance theorists seems to have been defined as extremity of response. Importance might be more appropriately defined by Sherif's method of determining the degree to which one is ego-involved in an attitude (Sherif, Sherif & Negergal, 1965). The appropriateness of such a measure rests on the fact that it may provide a means of predicting just when a person's attitude is so firmly held as to eliminate recourse to attitude change as a means of dissonance reduction. Brehm (1965) suggested that the findings from the Elms and Janis (1965) study may have failed to support dissonance theory because the subjects held their attitudes too firmly. Rosenberg's (1966) criticism of this suggestion as being either outside of, or in opposition to, current dissonance theory formulations was simply a justified exploitation of the dissonance theorist's lack of discrimination (at least in publications) between attitude importance and attitude extremity.

The use of Sherif's measures of ego involvement--which requests subjects to either accept, reject, or not respond to a series of statements

about an issue--may also provide a more meaningful measure of attitude change. That is, in addition to the change in the proportion of statements accepted and rejected, the subject may also change the number of statements he places in the non-commitment or "not respond" category. An expansion of this latter category (e.g., an increase in the number of statements neither accepted nor rejected) would indicate, according to Sherif, that the person has become less ego-involved in the issue. Devaluating the issue is one of the many possible modes of inconsistency reduction. However, the attitude measure used in most studies on attitude change can account for changes in attitude extremity but not for changes in the importance of the issue to the subject. If the war issue used in the present study was ego-involving, as operationally defined by Sherif, perhaps the use of Sherif's measurement technique would have shown that subjects reduced dissonance by decreasing the importance of the issue rather than by shifting their position. That is, their range of non-commitment could have increased even though response extremity, as measured by the 11-point rating scale used in this study, manifested only moderate change.

Thus, while the hypothesis tested in the present study may be applicable when the attitude is not ego-involving, the effects of either dissonance or reinforcement might be ambiguous when the issue is ego-involving. Most of the work on ego-involvement using Sherif's measurement technique has been within the broader framework of incentive or reinforcement theory (cf. Insko, 1967, pp. 64-92 for a recent review). The integration of this measure with the dissonance theory approach may further

help to resolve the unrealistic dichotomy between the consistency and reinforcement approaches.

The present study was purposely designed to include just the explicit criteria demanded by both incentive and dissonance theory. Thus, the negative findings indicate that the theories are not totally general in their application as the rather loose specifications of necessary and sufficient conditions illustrated by the hypotheses and successive supportive findings of other studies, would imply.

There are a great many unresolved problems in this area of attitude change and justification as they relate to the particular hypothesis examined in this experiment. However, the variables of salience and attitude content, especially as the latter relates to ego-involvement, were considered in some detail because they seem to have quite important and generalizable theoretical implications. While study in these areas could lead one very far afield from the justification problem an ultimate aim should be to resolve this one of a few remaining sources of conflict between the dissonance and incentive theories. The effect would be to integrate dissonance theory more thoroughly into the general body of psychological theory and could have extensive ramifications for the current intuitive approach in discussing and designing attitude change experiments. Any one-sided theoretical commitment which ignores an important process of attitude change will surely restrict the extensiveness and clarity of a researcher's predictions. Furthermore, such a situation could also instill certain false convictions that one is aware of all the critical assumptions, explicit and implicit, concerning the relevant variables in the experimental situation. The lack of more

complete specification within these theories may be reflected in the findings of the present study; it is made explicit, however, in Brehm's (1965) suggestion that only dissonance theorists are really competent to test dissonance theory hypotheses. Apparently, non-believers simply lack the grasp on the necessary, but unspecified, assumptions.

REFERENCES

- Adams, J. S. Wage inequities in a clerical task. Unpublished manuscript. General Electric Company, New York. Cited in J. S. Adams Inequity in Social Exchange. In L. Berkowitz (Ed.), Advances in experimental social psychology. New York: Academic Press, 1965, 2, 267-297.
- Adams, J. S. Inequity in social exchange. In L. Berkowitz (Ed.), Advances in experimental social psychology. New York: Academic Press, 1965, 2, 267-297.
- Abelson, R. P. & Rosenberg, M. J. Symbolic psycho-logic: A model of attitudinal cognition. Behavioral Science, 1958, 3, 1-13.
- Aronson, E. The psychology of insufficient justification: An analysis of some conflicting data. In S. Feldman (Ed.), Cognitive consistency. New York: Academic Press, 1966, pp. 115-133.
- Brehm, J. W. Comment on "Counter-norm attitudes induced by consonant versus dissonant conditions of role-playing." Journal of Experimental Research in Personality, 1965, 1, 61-64.
- Carlsmith, J. M., Collins, B. E., & Helmreich, R. K. Studies in forced compliance: I. The effect of pressure for compliance on attitude change produced by face-to-face role playing and anonymous essay writing. Journal of Personality and Social Psychology, 1966, 4, 1-13.
- Cartwright, D. & Harary, F. Structural Balance: a generalization of Heider's theory. Psychological Review, 1956, 63, 277-293.
- Chapanis, N. P., & Chapanis, A. Cognitive dissonance: Five years later. Psychological Bulletin, 1964, 61, 1-22.
- Cohen, A. R. An experiment on small rewards for discrepant compliance and attitude change. In J. W. Brehm & A. R. Cohen, Explorations in cognitive dissonance. New York: Wiley, 1962, pp. 73-78.
- Collins, B. & Helmreich, R. Studies in forced compliance: II. Contrasting mechanisms of attitude change produced by public-persuasive and private-essays. Paper read at Eastern Psychological Association, Philadelphia, 1965. Cited in C. A. Insko Theories of attitude change. New York: Appelton-Century Crofts, 1967, pp. 240-241.
- Elms, A. C., & Janis, I. L. Counter-norm attitudes induced by consonant versus dissonant conditions of role-playing. Journal of Experimental Research in Personality, 1965, 1, 50-60.
- Feldman, S. Motivational aspects of attitudinal elements and their place in cognitive interaction. In S. Feldman (Ed.), Cognitive consistency. New York: Academic Press, 1966, pp. 76-103.

- Festinger, L. A theory of cognitive dissonance. Evanston, Ill.: Row, Peterson, 1957.
- Festinger, L., & Carlsmith, J. M. Cognitive consequences of forced compliance. Journal of Abnormal and Social Psychology, 1959, 58, 203-210.
- Freedman, J. Attitudinal effects of inadequate justification. Journal of Personality, 1963, 31, 271-385.
- Freedman, J. L. & Sears, D. O. Warning, distraction and resistance to influence. Journal of Abnormal and Social Psychology, 1965, 1, 262-266.
- Gerard, H. B. Compliance, expectation of reward, and opinion change. Journal of Personality and Social Psychology, 1967, 6, 360-365.
- Hovland, C. I., Janis, I. L., & Kelley, H. H. Communication and persuasion. New Haven: Yale University Press, 1953.
- Insko, C. A. Theories of attitude change. New York: Appleton-Century Crofts, 1967.
- Janis, I. L., & Gilmore, J. B. The influence of incentive conditions on the success of role playing in modifying attitudes. Journal of Personality and Social Psychology, 1965, 1, 17-27.
- Jones, E. & Cooper, J. Incentive magnitude and time of commitment as determinants of cognitive dissonance. Unpublished manuscript, 1966. Cited in C. A. Insko Theories of attitude change. New York: Appleton-Century Crofts, 1967, pp. 242-243.
- Katz, D. & Stotland, E. Preliminary statement to a theory of attitudes. In S. Koch (Ed.), Psychology: the study of a science. New York: McGraw-Hill, 1959, 3, pp. 423-475.
- Kelman, H. Compliance, identification and internalization: three processes of attitude change. Journal of Conflict Resolution, 1958, 2, 51-60.
- Leventhal, G. Reward magnitude, task attractiveness, and liking for instrumental activity. Journal of Abnormal and Social Psychology, 1964, 68, 460-463.
- Linder, D. E., Cooper, J. & Jones, E. E. Decision freedom as a determinant of the role of incentive magnitude in attitude change. Journal of Personality and Social Psychology, 1967, 6, 245-255.

- McGuire, W. J. Direct and indirect persuasive effects of dissonance-producing messages. Journal of Abnormal and Social Psychology, 1960, 60, 345-353.
- McGuire, W. J. Inducing resistance to persuasion: some contemporary approaches. In L. Berkowitz (Ed.), Advances in experimental social psychology. New York: Academic Press, 1964, 1, 191-229.
- McGuire, W. J. Attitudes and opinions. Annual Review of Psychology, 1966, 17, 475-514.(a)
- McGuire, W. J. The status of cognitive consistency theories. In S. Feldman (Ed.), Cognitive consistency. New York: Academic Press, 1966, pp. 135-170. (b)
- Nuttin, J. M., Jr. Attitude change after rewarded dissonant and consonant "forced compliance." International Journal of Psychology, 1966, 1, 39-57.
- Rosenberg, M. J. An analysis of affective-cognitive consistency. In C. I. Hovland & M. J. Rosenberg (Eds.), Attitude organization and change. New York: Yale University Press, 1960, pp. 15-64.
- Rosenberg, M. J. When dissonance fails: On eliminating evaluation apprehension from attitude measurement. Journal of Personality and Social Psychology, 1965, 1, 28-42.
- Rosenberg, M. J. Some limits of dissonance: Toward a differentiated view of counterattitudinal performance. In S. Feldman (Ed.), Cognitive consistency. New York: Academic Press, 1966, pp. 135-170.
- Rosenberg, M. & Abelson, R. An analysis of cognitive balancing. In C. I. Hovland & M. J. Rosenberg (Eds.), Attitude organization and change. New York: Yale University Press, 1960, pp. 112-163.
- Sherif, C. W., Sherif, M., & Nebergall, R. E. Attitude and attitude change: the social judgment-involvement approach. Philadelphia: Saunders, 1965.
- Singer, J. E. Motivation for consistency. In S. Feldman (Ed.), Cognitive consistency. New York: Academic Press, 1966, pp. 48-72.
- Steiner, I. D. & Johnson, H. H. Relationships among dissonance reducing responses. Journal of Abnormal and Social Psychology, 1964, 68, 38-44.
- Steiner, I. D. & Rogers, E. D. Alternative responses to dissonance. Journal of Abnormal and Social Psychology, 1963, 66, 128-136.

- Tannenbaum, P. The congruity principle revisited: studies in the reduction, generalization and induction of persuasion. In L. Berkowitz (Ed.), Advances in experimental social psychology. New York: Academic Press, 1967, 3, 272-318.
- Walster, E. The temporal sequence of post-decision processes. In L. Festinger (Ed.), Conflict, Decision and Dissonance. Stanford: Stanford University Press, 1964, pp. 112-128.
- Weick, K. E. Task acceptance dilemmas: A site for research on cognition. In S. Feldman (Ed.), Cognitive consistency. New York: Academic Press, 1966, pp. 227-252.
- Zajonc, R. The concepts of balance, congruity, and dissonance. Public Opinion Quarterly, 1960, 24, 280-296.

CHAPTER 1

THEORY OF THE EARTH

1.1. THE EARTH AND ITS HISTORY

1.2. THE EARTH AND ITS HISTORY

The Earth is a planet in the Solar System, orbiting the Sun. It is the third planet from the Sun and the only one known to support life. The Earth is a rocky planet with a thin atmosphere and a liquid surface. It is the only planet in the Solar System with a large body of water, the oceans. The Earth is the only planet in the Solar System with a large body of water, the oceans.

The Earth is a planet in the Solar System, orbiting the Sun. It is the third planet from the Sun and the only one known to support life. The Earth is a rocky planet with a thin atmosphere and a liquid surface. It is the only planet in the Solar System with a large body of water, the oceans. The Earth is the only planet in the Solar System with a large body of water, the oceans.

The Earth is a planet in the Solar System, orbiting the Sun. It is the third planet from the Sun and the only one known to support life. The Earth is a rocky planet with a thin atmosphere and a liquid surface. It is the only planet in the Solar System with a large body of water, the oceans. The Earth is the only planet in the Solar System with a large body of water, the oceans.

A P P E N D I C E S

The Earth is a planet in the Solar System, orbiting the Sun. It is the third planet from the Sun and the only one known to support life. The Earth is a rocky planet with a thin atmosphere and a liquid surface. It is the only planet in the Solar System with a large body of water, the oceans. The Earth is the only planet in the Solar System with a large body of water, the oceans.

The Earth is a planet in the Solar System, orbiting the Sun. It is the third planet from the Sun and the only one known to support life. The Earth is a rocky planet with a thin atmosphere and a liquid surface. It is the only planet in the Solar System with a large body of water, the oceans. The Earth is the only planet in the Solar System with a large body of water, the oceans.

The Earth is a planet in the Solar System, orbiting the Sun. It is the third planet from the Sun and the only one known to support life. The Earth is a rocky planet with a thin atmosphere and a liquid surface. It is the only planet in the Solar System with a large body of water, the oceans. The Earth is the only planet in the Solar System with a large body of water, the oceans.

The Earth is a planet in the Solar System, orbiting the Sun. It is the third planet from the Sun and the only one known to support life. The Earth is a rocky planet with a thin atmosphere and a liquid surface. It is the only planet in the Solar System with a large body of water, the oceans. The Earth is the only planet in the Solar System with a large body of water, the oceans.

APPENDIX A

Pre-experimental and Post-experimental Attitude Questionnaire

CURRENT ISSUES SURVEY

Please read each statement carefully. Indicate your agreement or disagreement by placing a check (✓) in the appropriate box.

It has been suggested that high schools make more use of closed circuit television for teaching. With television, classes would be taught more uniformly. Fewer, thus probably better, facilities would be used. Those who object feel that individual student attention would suffer

1. Television should be used more for teaching high school.

[illegible]

U.S. participation in the Vietnam war has raised world-wide controversy. Some feel that the U.S. should withdraw and let the Vietnamese fight their own war, especially since the Vietnamese do not seem to want U.S. intervention. Others feel the U.S. should fight in Asia to protect small countries from Communist domination.

2. The U.S. should fight in Vietnam.

[illegible]

APPENDIX B

Task Instructions for the Positive, Negative,
and Neutral Sponsors¹Negative Sponsor

You will probably find the experiment in which are about to participate an excellent exercise in open-minded thinking. However, because we realize that some individuals do not wish their existing attitudes to be challenged, we have written this introduction to avoid any hint of undue pressure from our experimenter.

This experiment is not conducted by the psychology department. You will not receive an experimental credit for serving but you will, instead, be paid in real cash money. If you do not wish to serve you are absolutely free to leave at any time.

The Viet-Nam Non-War organization is paying for this research. In light of recent excesses by other groups, we would like to say that while we oppose the war in Viet-Nam, we are neither fanatics, nor anti-democratic.

No matter what your own personal attitudes may be, we would like you to write an essay supporting our anti-war position, including the best arguments you have heard or can think of on the spot. You will be paid \$1.50 (\$.50, \$4.50) for your essay. You may spend as much, or as little time on the essay as you see fit.

The essays will be used to help us identify the more popular arguments used by college students. They will provide material for counter-

¹For the subject, there were no headings or titles of any kind on these instructions.

APPENDIX B (continued)

arguments to be used against our opponents. They will help us polish our present mode of presentation.

When you wish to begin, the experimenter will give you your money and provide you with the necessary writing materials.

Neutral Sponsor

You will probably find the experiment in which you are about to participate an excellent exercise in open-minded thinking. However, because we realize that some individuals do not wish their existing attitudes to be challenged, we have written this introduction to avoid any hint of undue pressure from our experimenter.

This experiment is not conducted by the psychology department. You will not receive an experimental credit for serving but you will, instead, be paid in real cash money. If you do not wish to serve you are absolutely free to leave at any time.

A non-political students' organization is paying for this research. We are interested in examining current student arguments toward a variety of critical problems in the world today.

Today's research deals with the current Viet-Nam war issue. No matter what your own personal attitudes may be, we would like you to write an essay supporting an anti-war position, including all the best arguments you have heard or can think of on the spot. You will be paid \$4.50 (\$1.50, \$.50) for your essay. You may spend as much, or as little time on the essay as you see fit.

APPENDIX B (continued)

The purpose of these essays is to help us identify the more popular arguments used by students. In our organization, we have members who are pro-war, anti-war and uncommitted. As interviewers they tend to be affected by their own mutual biases. Thus, like regular social science researchers, we have found it best to use the more formal and objective conditions such as you are presently in. Your essays will, of course, be used for our research purposes only.

When you wish to begin, the experimenter will give you your money and provide you with the necessary writing materials.

Positive Sponsor

You will find the experiment in which you are about to participate an excellent exercise in open-minded thinking. However, because we realize that some individuals do not wish their existing attitudes to be challenged, we have written this introduction to avoid any hint of undue pressure from our experimenter.

This experiment is not conducted by the psychology department. You will not receive an experimental credit for serving, but you will, instead, be paid in real cash money. If you do not wish to participate you are absolutely free to leave at any time.

The Viet-Nam Pro-War organization is paying for this research. In light of recent excesses by other groups, we would like to say that while we definitely support the war in Viet-Nam, we are neither fanatics, nor anti-democratic.

APPENDIX B (continued)

No matter what your own personal attitudes may be, we would like you to write an essay supporting an anti-war position including the best arguments you have heard, or can think of on the spot. You will be paid \$1.50 (\$.50, \$4.50) for your essay. You may spend as much, or as little time on the essay as you see fit.

The essays will help us to anticipate the anti-war arguments currently being used by college groups. Our pro-war presentations will be more effective if we can counter the popular anti-war arguments before they are spoken. Knowing these arguments in advance will also give us time to search for facts that will weaken the arguments.

When you wish to begin, the experimenter will give you your money and provide you with the necessary writing materials.

APPENDIX C

Instruction Sheet Footnotes to Induce Feelings
of Underpayment, Overpayment, or Adequate
Payment for Task Performance¹Adequate Payment Induction

¹This is the average response of one-hundred and seventy-five randomly selected 202 students who were asked what they would consider to be a fair and adequate pay rate for performing this particular task.

Overpayment Induction

¹You may have some undergraduate friends who received \$.50 for writing this essay. For sometime now we have been using graduate students' essays only. They have received \$4.50 per essay because they generally possess greater breadth of information and experience than do most undergraduates. Now, we want essays from only a very few undergraduates as a check to see if the graduate students really are in touch with the ideas on campus. Because of the small number of undergraduates involved, and because we wish to keep as many conditions constant as possible, you will receive \$4.50 instead of the usual \$.50.

Underpayment Induction

¹You may be aware that several undergraduates were paid \$4.50 for writing this essay. However, we had originally decided that \$1.50 would be reasonable payment for the essay. Unfortunately, when the secretary typed the instructions for the experimenter, she inserted \$4.50 in place of the \$1.50. She thought we had made a mistake, because we had recently paid persons \$4.50 for similar essays. However, these people were actually committed to write a series of essays over a long period of time, and not just a single essay. The experimenter, who had worked for us earlier under the \$4.50 essay series condition simply assumed that the subjects knew that they were to write a series of essays. We will not now, of course, ask them to do this. Since we have a budget to meet, we must bring the average cost per essay down toward the originally proposed figure of \$1.50. It is for this reason that our last few subjects will receive \$.50 per essay.

APPENDIX D₁

Pre-writing Experiment Evaluation Form

Psychology Department Questionnaire

Anonymous questionnaires such as this are always used whenever outside organizations hire 202 students for research purposes. Please answer the following questions as objectively as possible.

Place your check mark in one of the spaces between the vertical lines for each of the following questions.

1. How much choice did you have in agreeing to participate?

no						My own
choice						decision

2. How much money are you being paid to write this essay? _____

3. How adequate do you feel this pay rate to be (for yourself)?

very much						very much
underpaid						overpaid

4. How do you feel about working for this organization?

very much						very much
dislike						enjoy

Please deposit this questionnaire in the box as soon as you have completed it. Thank you.

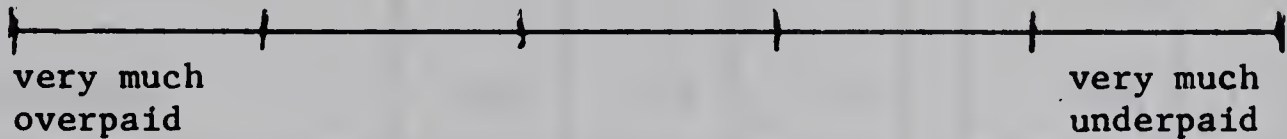
¹Scored from 1 on the extreme left through 6 on the extreme right.

APPENDIX E¹

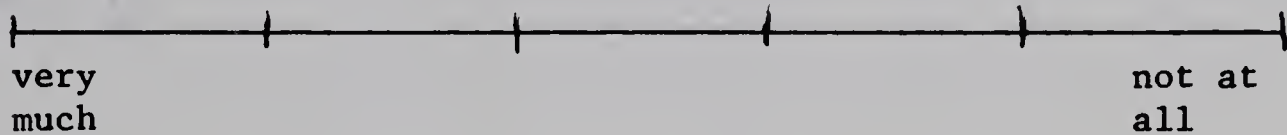
Post-Writing Experiment Evaluation Form

II The Experiment

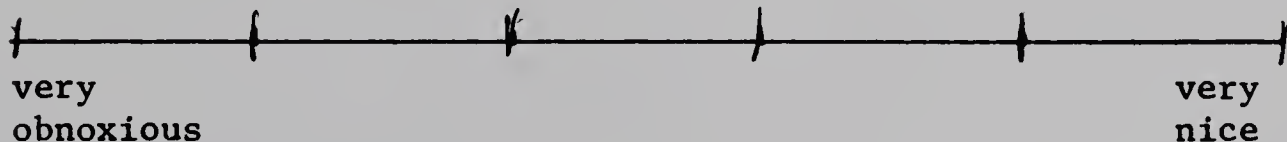
1. What experiment did you just serve in? (name or number) _____
2. If you were in one of the experiments that paid cash, how adequate do you feel this pay rate to be (for yourself)?



3. How much did you enjoy the experiment?



4. What did you think of the experimenter?



¹Scored from 1 on the extreme left through 5 on the extreme right.

APPENDIX F

Test of Significance for Linear and Quadratic
Trends over the Levels of Payment¹

Size of Payment	\$.50	\$1.50	\$4.50
Attitude change: summed over sponsorship variable	72	37	75
Linear coefficients	-10	-4	14
Quadratic coefficients	5.53	-7.78	1.85

Sum of Squares	df	F
.022	1	
29.18	1	3.01*

*p < .10

APPENDIX G

Orthogonal Comparisons on Attitude Change¹

Cell Sums: Set One

LEVEL OF JUSTIFICATION ²	VLJ	MLJ1	MLJ2	AJ	OJ	A*	df	F
ATTITUDE CHANGE: CELL SUMS	10	36	21	13	23			
VLJ & MLJ	-1	1/2	1/2	0	0	25.35	1	2.62*
AJ & OJ	0	0	0	1	-1	5.56	1	
MLJ1 & MLJ2	0	1/2	-1/2	0	0	12.50	1	
VLJ + MLJ & AJ + OJ	-1	-1/2	-1/2	1	1	.051	1	

*p < .25

¹Error term: 9.69 (df = 72) from Table 1.

²Levels of Justification: very low justification (VLJ)
\$.50 & negative sponsor.

moderately low justification (MLJ)
MLJ1 = \$.50 & neutral sponsor.
MLJ2 = \$1.50 & negative sponsor.

adequate justification (AJ)
\$1.50 & neutral sponsor.

over justification (OJ)
\$4.50 & positive sponsor.

Orthogonal Comparisons on Attitude Change¹

Cell Sums: Set Two

LEVEL OF JUSTIFICATION ²	VLJ	MLJ1	MLJ2	AJ	OJ	A*	DF	F
ATTITUDE CHANGE: CELL SUMS	10	36	21	13	23			
VLJ + AJ & MLJ + OJ	-1	1/2	1/2	-1	1	25.79	1	2.66*
MLJ & OJ	0	-1/2	-1/2	0	1	2.20	1	
VLJ & AJ	1	0	0	-1	0	0.50	1	
MLJ1 & MLJ2	0	-1/2	1/2	0	0	12.50	1	

*p < .25

¹Error term: 9.69 (df = 72) from Table 1.

²Levels of Justification: very low justification (VLJ)
\$.50 & negative sponsor.

moderately low justification (MLJ)
MLJ1 = \$.50 & neutral sponsor.
MLJ2 - \$1.50 & negative sponsor.

adequate justification (AJ)
\$1.50 & neutral sponsor.

over justification (OJ)
\$4.50 & positive sponsor.

APPENDIX H

Summary of the Analysis of Covariance of
the Post-Experimental Attitude Measure¹

Source of Variation	df	Mean Square	F
A: Sponsorship	2	2.186	
B: Money	2	13.446	
A X B	4	17.501	
Error	71	8.951	

¹Mean squares adjusted for the effects of the pre-experimental attitude measure.

APPENDIX I

Summary of the Analysis of Variance of
the Transformed¹ Adequacy of Payment
Change Scores

Source of Variation	df	Mean Square	F
A: Sponsorship	2	.032	
B: Money	2	.111	4.44*
A X B	4	.064	2.56*
Error	72	.025	

*p < .05

¹X transformed = log X +1

APPENDIX J

Summary of the Analysis of Variance of Responses to the
Question: "How much choice did you have in agreeing
to participate?"¹

Source of Variation	df	Mean Square	F
A: Sponsorship	2	.012	
B: Money	2	.161	
A X B	4	.624	
Error	72	.420	

Mean Response² to the Question: "How much choice did
you have in agreeing to participate?" under each
Experimental Condition

	Negative Sponsor	Neutral Sponsor	Positive Sponsor	Money: averaged over sponsorship
\$0.50	6.000	5.889	5.556	5.815
\$1.50	5.667	5.444	5.889	5.667
\$4.50	5.556	5.889	5.889	5.778
Sponsorship: averaged over money	5.741	5.741	5.778	5.753

¹Appendix D

²Larger numbers indicate a greater feeling of choice.

APPENDIX K

Summary of the Analysis of Variance of Responses to the Question: "How much did you enjoy the experiment?"¹

Source of Variation	df	Mean Square	F
A: Sponsorship	2	0.086	
B: Money	2	2.383	2.63*
A X B	4	0.568	
Error	72	0.904	

* $p < .10$

Mean Response² to the Question: "How much did you enjoy the experiment?" under each Experimental Condition

	Negative Sponsor	Neutral Sponsor	Positive Sponsor	Money: averaged over sponsorship
\$0.50	3.889	3.444	3.556	3.630
\$1.50	3.111	3.333	3.667	3.370
\$4.50	4.000	4.000	3.889	3.963
Sponsorship: averaged over money	3.667	3.593	3.704	3.654

¹Appendix E.

²Larger numbers indicate greater enjoyment of the experiment.

APPENDIX L

Summary of the Analysis of Variance of Responses to the
What did you think of the experimenter?"¹

Source of Variation	df	Mean Square	F
A: Sponsorship	2	1.864	2.69*
B: Money	2	0.235	
A X B	4	0.864	
Error	72	0.691	

*p < .10

Mean Response² to the Question: "What did you think of
the Experimenter?" under each Experimental Condition.

	Negative Sponsor	Neutral Sponsor	Positive Sponsor	Money: averaged over sponsorship
\$0.50	3.889	4.444	4.333	4.222
\$1.50	4.000	4.556	3.778	4.111
\$4.50	3.889	4.333	4.667	4.296
Sponsorship: averaged over money	3.926	4.444	4.259	4.210

¹Appendix E.

²Larger numbers indicate a greater liking for the experimenter.

APPENDIX M

Summary of the Analysis of Variance of the
Number of Arguments per Essay

Source of Variation	df	Mean Square	F
A: Sponsorship	2	4.704	
B: Money	2	14.778	
A X B	4	9.426	
Error	72	12.073	

Mean Number of Arguments per Essay Under Each
Experimental Condition

	Negative Sponsor	Neutral Sponsor	Positive Sponsor	Money: averaged over sponsorship
\$0.50	6.778	8.111	9.000	7.963
\$1.50	8.000	6.333	6.556	6.963
\$4.50	7.778	8.222	9.222	8.407
Sponsorship: averaged over money	7.519	7.556	8.259	7.778

APPENDIX N

Summary of the Analysis of Variance of the
Number of Words per Essay

Source of Variation	df	Mean Square	F
A: Sponsorship	2	4,999.346	
B: Money	2	55,669.494	2.69*
A X B	4	25,225.272	
Error	72	20,653.858	

*p < .10

Mean Number of Words per Essay under each
Experimental Condition

	Negative Sponsor	Neutral Sponsor	Positive Sponsor	Money: averaged over sponsorship
\$0.50	303.778	376.778	356.555	345.704
\$1.50	420.000	332.555	420.889	391.148
\$4.50	488.667	421.667	397.000	435.778
Sponsorship: averaged over money	404.148	377.000	391.481	390.877

APPENDIX O

Summary of the Analysis of Variance of the
Number of Minutes Spent Writing per Essay

Source of Variation	df	Mean Square	F
A: Sponsorship	2	56.679	
B: Money	2	196.605	
A X B	4	236.290	
Error	72	179.092	

Mean Number of Minutes Spent Writing per Essay
Under Each Experimental Contion

	Negative Sponsor	Neutral Sponsor	Positive Sponsor	Money: averaged over sponsorship
\$0.50	29.222	30.778	34.667	31.556
\$1.50	32.444	30.111	38.778	33.778
\$4.50	35.667	43.000	32.111	36.926
Sponsorship: averaged over money	32.444	34.630	35.185	34.086

<u>Code</u>	<u>Variable</u>
1	Pre-experimental attitude score
2	Post-experimental attitude score
3	Attitude change score (1 minus 2)
4	Pre-writing adequacy of payment score
5	Post-writing adequacy of payment score
6	Adequacy of payment change score (5 minus 4)
7	"How much did you enjoy the experiment?" (Appendix E)
8	"What did you think of the experimenter?" (Appendix E)
9	"How much choice did you have in agreeing to participate?" (Appendix D)
10	"How do you feel about working for this organization?" (Appendix D)
11	Number of minutes spent writing the essay
12	Number of arguments contained in the essay
13	Number of words contained in the essay

APPENDIX P

Correlations Between all Pairs of Dependent Variables
Averaged over all Independent Variables¹

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1.000	.049	.298	.057	.023	.040	.029	.049	.117	.064	.068	.180	.145
2		1.000	-.939	-.064	.045	-.127	-.074	-.144	.020	.003	-.061	-.094	-.069
3			1.000	.081	-.035	.135	.081	.155	.021	.019	.082	.152	.116
4				1.000	.635	.414	.247	.155	.025	.326	.251	.245	.334
5					1.000	-.426	.233	.156	-.006	.204	.235	.242	.211
6						1.000	.012	-.003	.036	.166	.028	.004	.171
7							1.000	.231	.063	.307	.215	.171	.306
8								1.000	.303	.155	.011	.051	-.120
9									1.000	.207	-.119	-.048	-.078
10										1.000	.149	.156	.216
11											1.000	.242	.625
12												1.000	.414
13													1.000

¹If $r > .217$, $p < .05$ and if $r > .283$, $p < .01$.

NOTE: for variable identifications see page 77.

APPENDIX Q

Correlations Between all Pairs of Dependent Variables for each Level of Payment¹

\$0.50 level of payment

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1.000	.265	.082	-.034	.027	-.059	.219	-.189	.257	.288	.329	.274	.412
2		1.000	-.939	-.050	.193	-.252	.374	-.080	.101	.225	-.099	-.291	-.265
3			1.000	.040	-.189	.239	-.308	.015	-.013	-.130	.220	.398	.420
4				1.000	.493	.347	.023	.092	-.023	.248	.546	.314	.562
5					1.000	-.645	-.129	.000	-.198	-.050	.174	.339	.141
6						1.000	.159	.081	.194	.271	.292	-.089	.341
7							1.000	.185	.085	.175	.132	-.185	.075
8								1.000	.240	-.171	-.022	-.218	-.135
9									1.000	.184	-.176	-.333	-.086
10										1.000	.168	-.006	.191
11											1.000	.324	.750
12												1.000	.591
13													1.000

NOTE: for variable identifications see page 77 .

¹If $r > .381$, $p < .05$ and if $r > .487$, $p < .01$

APPENDIX Q (Continued)

\$1.50 level of payment

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1.000	-.188	.512	.076	-.135	.165	-.249	.294	-.018	-.003	.199	.303	.126
2		1.000	-.940	-.033	.074	-.084	-.157	-.095	.072	.013	-.045	-.282	-.090
3			1.000	.055	-.111	.131	.051	.185	-.069	-.012	.108	.352	.122
4				1.000	.153	.552	.153	.008	.240	.184	.051	.306	.033
5					1.000	-.739	.185	.207	.233	.280	.354	-.001	.036
6						1.000	-.052	-.169	-.033	-.111	-.264	.209	-.007
7							1.000	.155	-.035	.333	.166	.252	.425
8								1.000	.063	.365	.099	.140	-.078
9									1.000	.078	-.048	.116	-.058
10										1.000	.300	.272	.062
11											1.000	.211	.582
12												1.000	.342
13													1.000

NOTE: for variable identifications see page 77 .

APPENDIX Q (Continued)

\$4.50 level of payment

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1.000	.045	.306	.101	.049	.025	.111	.019	.099	-.104	-.278	-.027	-.073
2		1.000	-.937	-.104	.023	-.110	-.330	-.216	-.053	-.111	-.039	.301	.117
3			1.000	.134	-.005	.113	.353	.213	.085	.070	-.059	-.296	-.137
4				1.000	.515	.219	.382	.391	-.014	.083	.049	.295	.090
5					1.000	-.688	.363	.224	-.024	-.012	.088	.311	.111
6						1.000	-.106	.060	.016	.150	-.025	-.106	.029
7							1.000	.326	.125	.249	.295	.226	.331
8								1.000	.607	.180	-.077	.106	-.184
9									1.000	.358	-.151	-.058	-.082
10										1.000	-.102	.081	.203
11											1.000	.209	.543
12												1.000	.519
13													1.000

Note: for variable identifications see page 77.

Correlations between all pairs of Dependent Variables
for each Level of Sponsorship¹

Positive Sponsor

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1.000	.255	.118	.150	.176	-.060	-.079	.098	.153	.059	.231	.220	.105
2		1.000	-.930	-.063	.135	-.180	-.116	-.018	-.045	.121	.044	.104	.016
3			1.000	.121	-.072	.161	.089	.055	.104	-.101	-.042	-.023	.023
4				1.000	.370	.567	.384	.298	.074	.433	.150	.236	.320
5					1.000	-.541	.161	.309	-.102	.213	.242	.484	.154
6						1.000	.222	.005	.145	.221	-.022	-.189	.200
7							1.000	.092	-.041	.179	.243	.432	.430
8								1.000	.279	.093	-.018	.131	-.246
9									1.000	.170	-.182	-.283	-.079
10										1.000	.250	.340	.600
11											1.000	.327	.568
12												1.000	.590
13													1.000

NOTE: for variable identifications see page 77

¹If $r > .381$, $p < .05$ and if $r > .487$, $p < .01$

APPENDIX R (Continued)

Neutral Sponsor

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1.000	-.049	.394	.190	.052	.301	.168	.075	-.037	.109	-.076	-.028	.121
2		1.000	-.937	.190	.240	-.095	.132	.305	.012	.184	-.073	-.185	-.191
3			1.000	-.109	-.202	.193	-.063	-.254	-.024	-.131	.041	.160	.218
4				1.000	.891	.284	.359	-.063	.098	.437	.396	.175	.337
5					1.000	-.182	.381	.106	.294	.368	.388	.150	.275
6						1.000	-.028	-.360	-.410	.169	.038	.061	.150
7							1.000	-.011	.107	.384	.430	.082	.567
8								1.000	.125	-.046	.118	-.016	.126
9									1.000	.300	.192	.068	.112
10										1.000	.168	-.008	.135
11											1.000	.293	.654
12												1.000	.612
13													1.000

NOTE: for variable identifications see page 77

APPENDIX R (Continued)

Negative Sponsor

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1.000	-.222	.454	-.118	-.156	.106	.077	.231	.278	.180	.152	.427	.197
2		1.000	-.969	-.335	-.260	-.048	-.174	-.446	.088	-.194	-.201	-.274	-.068
3			1.000	.276	.199	.071	.178	.466	-.010	.222	.222	.358	.112
4				1.000	.635	.353	.000	.136	-.105	.130	.136	.316	.389
5					1.000	-.475	.219	.077	-.189	.085	-.022	.021	.213
6						1.000	-.300	.060	.132	-.92	.130	.306	.198
7							1.000	.479	.144	.422	-.011	-.110	-.048
8								1.000	.428	.209	-.102	.010	-.143
9									1.000	.191	-.436	.099	-.262
10										1.000	-.002	.062	-.069
11											1.000	.064	.727
12												1.000	.208
13													1.000

NOTE: for variable identifications see page 77

APPENDIX S

Issues, Rewards, and Sponsors of Representative Studies

author : Cohen, A. (in Brehm & Cohen, 1962)
 issue : Support police against charges of brutality during a recent student riot.
 reward : \$.50, \$1.00, \$5.00, \$10.00
 sponsor: The Institute of Human Relations

author : Carlsmith, J. M., Collins, B. E. & Helmreich, R. K. (1966)
 issue : support interesting and enjoyable aspects of a dull task.
 reward : \$.50, \$1.50, \$5.00
 sponsor: Psychology Department

author : Collins, B. E. & Helmreich, R. K. (1965)
 issue : Support pleasant tasting aspect of unsweetened quinine solution.
 reward : \$.50, \$2.50
 sponsor: Not reported, probably psychology department

author : Elms, A. C. & Janis, I. L. (1965)
 issue : Support sending some U.S. students to do all of their undergraduate work in Russia.
 reward : \$.50, \$10.00
 sponsor: U.S. State Department or the Russian Embassy

author : Gerard, H. B. (1967)
 issue : Support university regulation forbidding involvement of the student government in off-campus issues
 reward : \$.50, \$2.00, \$5.00
 sponsor: Survey Research Institute

author : Janis, I. L. & Gilmore, J. B. (1965)
 issue : Support the addition of one year of mathematics and physics courses to the required undergraduate curriculum
 reward : \$1.00, \$20.00
 sponsor: National research organization employed by several large universities, or a publishing company gathering material for an advertising campaign.

APPENDIX S (Continued)

author : Jones, E. & Cooper, J (1966)
issue : Support state law banning Communist speakers from campus
reward : \$.50, \$2.50
sponsor: Not reported, probably psychology department

author : Linder, D. E., Cooper, J. & Jones, E. E. (1967)
issue : Support state law banning Communist speakers from campus
(experiment 1) and support paternalistic policy of university
toward students (experiment 2)
reward : \$.50, \$2.50
sponsor: Association of Private Colleges of the Southeast (experiment 1)
or a graduate student in the Education Faculty with a grant.

author : Rosenberg, M. J. (1965)
issue : Support the university's decision not to participate in the
Rose Bowl Football game.
reward : \$.50, \$1.00, \$5.00
sponsor: Graduate student in the Education Faculty with a grant.

B29904